

AMERICAN QUARTER HORSE ASSOCIATION SHOW  
MANAGERS' VIEWS ON INCIDENT RESPONSE  
PLANNING FOR NATURAL DISASTERS AT EQUINE  
EVENTS: A DELPHI STUDY

By

MIKAYLA ANN BOGE

Bachelor of Science in Animal Science

Kansas State University

Manhattan, KS

2011

Submitted to the Faculty of the  
Graduate College of the  
Oklahoma State University  
in partial fulfillment of  
the requirements for  
the Degree of  
MASTER OF SCIENCE  
May, 2015

AMERICAN QUARTER HORSE ASSOCIATION  
SHOW MANAGERS' VIEWS ON INCIDENT  
RESPONSE PLANNING FOR NATURAL DISASTERS  
AT EQUINE EVENTS: A DELPHI STUDY

Thesis Approved:

Traci L. Naile

---

Thesis Adviser

D. Dwayne Cartmell II

---

Steven R. Cooper

---

Name: MIKAYLA ANN BOGE

Date of Degree: MAY, 2015

Title of Study: AMERICAN QUARTER HORSE ASSOCIATION SHOW  
MANAGERS' VIEWS ON INCIDENT RESPONSE PLANNING FOR NATURAL  
DISASTERS AT EQUINE EVENTS: A DELPHI STUDY

Major Field: AGRICULTURAL COMMUNICATIONS

The horse industry is a multi-billion dollar industry that could be affected by natural disasters that can strike quickly and cause an immense amount of damage. Being prepared is key. The purpose of this study was to describe perceptions of event management about the important aspects of planning for natural disasters during large-scale equine events, including their views about current incident response plans, elements that should be included in incident response plans, and elements that should not be included incident response. Perceptions of current U.S. AQHA show managers were collected through a three-round Delphi study.

The show managers generated 34 items related to incident response planning and reached consensus on 22 items. The show managers agreed coordinating with event facility and other emergency response agencies, monitoring weather conditions, having proper communication tools, having available equine medical services, having appropriate shelter, and having an alternate plan were important elements of incident response plans. In addition, the show managers agreed that doing nothing in the way of planning was not acceptable.

The show managers regarded many items as being responsibilities of event facility management, rather than show management responsibilities. AQHA should provide incident response information and material in mandatory training courses for AQHA show managers, as being prepared is vital to lessening the severity of damages and insuring the safety of people and animals involved in large-scale equine events. Also, other individuals, organizations, or equine events could access and utilize the information provided by AQHA. Additional research is needed about show managers' perceptions of their roles in incident response planning during equine events. A study also should be conducted using a larger and different population as well as a study about why certain incident response items are adopted. In addition, communications between event facility management and show management related to the effectiveness of incident response plans, views of equine event attendees about expected incident response plans, incident response planning for biosecurity at large-scale equine events, and the roles of insurance policies in incident response should be evaluated.

## TABLE OF CONTENTS

Chapter	Page
I. INTRODUCTION .....	1
Background and Setting .....	1
Statement of the Problem .....	4
Purpose .....	4
Objectives .....	5
Scope .....	5
Significance of Study .....	5
Assumptions .....	6
Limitations .....	6
Definition of Terms .....	6
II. REVIEW OF LITERATURE .....	9
Equine Industry .....	9
American Quarter Horse Association .....	10
Oklahoma Equine Industry .....	11
Incident Management .....	13
Natural Disasters .....	16
Diffusion of Innovation Theory .....	17
Innovation .....	18
Relative Advantage .....	19
Compatibility .....	19
Complexity .....	19
Trialability .....	20
Observability .....	20
Communication Channel .....	21
Time .....	22
Social System .....	22
Diffusion of Innovation Case Study .....	23
Innovation-Decision Process .....	24

Chapter	Page
III. METHODOLOGY .....	25
Institutional Review Board .....	25
Research Design and Methodology .....	25
Population and Sample .....	27
Instrumentation .....	28
Validity .....	29
Reliability.....	29
Data Collection .....	30
Round One .....	30
Round Two .....	31
Round Three .....	31
Data Analysis .....	32
IV. FINDINGS.....	33
Findings.....	34
Professional Characteristics of the Delphi Panelists .....	34
Round One .....	35
Round Two.....	38
Round Three.....	42
V. CONCLUSION, RECOMMENDATIONS, AND IMPLICATIONS .....	44
Conclusions.....	45
Conclusions for Objective 1 .....	45
Conclusions for Objective 2 .....	48
Conclusions for Objective 3 .....	50
Discussion.....	51
Implications.....	53
Recommendations for Practice .....	54
Recommendations for Research .....	54
REFERENCES .....	56
APPENDICES .....	63
A. Institutional Review Board Approvals .....	64
B. Participation Request Email .....	68
C. Round One Emails .....	70
D. Round One Phone Script .....	75
E. Round One Instrument .....	77
F. Round Two Emails .....	80
G. Round Two Instrument .....	83

Chapter	Page
H. Round Three Emails .....	87
I. Round Three Instrument .....	90

## LIST OF TABLES

Table	Page
1 AQHA Region Demographics from Round One .....	35
2. Actions Identified during Round One that Should be Included in Incident Planning for a Large-Scale Equine Event .....	37
3. Levels of Agreement from Round Two .....	39
4. Additional Comments from Round Two .....	41
5. Levels of Agreement from Round Three .....	42
6. Additional Comments from Round Three .....	43

## LIST OF FIGURES

Figure	Page
1 The Four Phases of Emergency Management .....	16
2. Variables Determining the Rate of Adoption of Innovations.....	18



## CHAPTER I

### INTRODUCTION

#### **Background and Setting**

An equine event can consist of attendees, staff members, volunteers, and equine competitors from many different geographical locations (American Quarter Horse Association, 2014c). Individuals in attendance at the event also can range in language, knowledge of the area and event facility, age, and safety procedures (Tomascik, 2011). A natural disaster can strike a location without warning, range in severity and affect a large population at one time (Lindell, 2013). A natural disaster could occur at an equine event. Furthermore, during an equine event, incident response planning for a natural disaster is not at the forefront of an individual's mind (Linnabary, New, Vogt, Griffith-Davies, & Williams, 1993). Thus, the responsibility lies with event staff members for having a management plan in place and conveying the plan to event attendees (Soomaroo & Murray, 2012). The event staff need to have an incident response plan and be the line of communication to the event attendees (Soomaroo & Murray, 2012), but a lack of information and planning during a natural disaster is typical for events involving animals (Linnabary et al., 1993). According to the Federal Emergency Management Agency (FEMA) Module A Unit 8 material, human safety is of main concern during a disaster

(Federal Emergency Management Agency, 2015). Thus, event management needs to be aware of possible disasters and how to plan properly for an incident to ensure the safety and to reduce the risks to participants and equine competitors at the event (Walker, 2011).

Natural disasters range in type, size, and severity (Lindell, 2013). A natural disaster is categorized by FEMA as one of the following: drought, earthquake, extreme heat, flood, hurricane, landslide and debris flow, severe weather, space weather, thunderstorm and lightning, tornado, tsunamis, volcano, wildfires, and winter storm and extreme cold (Ready.gov, 2014, para. 1). Each natural disaster ranges in the different challenges brought forth and how an organization will respond to each one (Quarantelli, 1985). Without proper training and planning, a greater chance exists for miscommunication, damages, and possible loss of human and livestock life, whether it is a man-made or natural event (Bryant, 2007). “The greatest problem occurs from lack of planning for an emergency event” (Linnabary et al., 1993, p. 1), thus the need for incident response planning.

Few studies pertaining to incident planning during a large-scale equine event have been published. However, incident planning is needed in the equine industry not only to ensure the safety of all involved, but also because a natural disaster at a large-scale equine event could cause great economic loss to attendees of the event (Bryant, 2007). The equine industry is large and far-reaching, and involves a range of individuals on different levels (American Horse Council, 2014). The equine industry employs 701,000 people directly in the United States (American Horse Council, 2014). Some of those individuals are only considered to be seasonal or part-time employees, giving a total of 453,000 full-time employees (American Horse Council, 2014). Annually, the horse

industry impacts the U.S. economy by generating revenue of \$39 billion (American Horse Council, 2014). If the amount spent by industry suppliers and employees is taken into consideration, the annual impact of the equine industry on the U.S. economy rises to \$102 billion (American Horse Council, 2014). This number could rise more, if off-site spending by spectators was taken into account (American Horse Council, 2014).

Due to the economic impact of the equine industry and the need to keep individuals and animals safe at events, incidents beyond natural disasters also must be included in planning. The equine industry may be more at risk to crisis incidents such as zoonotic infection due to the increased exposure to horses and large crowds (Schemann, Firestone, Taylor, Toribio, Ward, & Dhand, 2013). The equine industry is a prominent and major part of our “national, state, and local economy” (American Horse Council, 2014, para. 1). Since a natural disaster can cause widespread losses (Gillespie & Banerjee, 1993), the equine industry could be affected, with a large number of organizations and individuals experiencing a loss of income after a disaster (Gillespie & Banerjee, 1993).

AQHA’s mission is to grow the horse industry, and it continues to be a major component of advocacy for the American Quarter Horse and the horse industry as a whole (American Quarter Horse Association, 2014b). AQHA’s foremost concern is the well-being of the American Quarter Horse by providing programs to promote the health and well-being of the horse (American Quarter Horse Association, 2014b). With the large amount of individuals, income, and animals contributing to equine events, it is important to plan ahead to ensure safety in the equine industry (Bryant, 2007).

The American Quarter Horse Association is a large organization which maintains memberships and Quarter Horse records worldwide (American Quarter Horse Association, 2014a). The organization caters to different types of disciplines, ranging from racing to equine hobbyist and sanctions many different types of events in the equine industry (American Quarter Horse Association, 2014a). AQHA equine events generate revenue for the event itself, but also for area businesses. Not only could a natural disaster be financially threatening for an AQHA event and area businesses (Bryant, 2007: American Horse Council, 2014), individuals' safety is at stake too while attending the event (Soomaroo & Murray, 2012). Having an incident response plan can lessen the economic impact of the natural disaster (Gillespie & Banerjee, 1993) and keep event attendees safe (Walker, 2011).

### **Statement of the Problem**

During a large-scale equine event, many individuals and animals gather in one area, usually during an extended period of time (Walker, 2011). The safety of the event attendees and animals is important. A natural disaster can happen without warning and last for an unknown duration (Quarantelli, 1985). To ensure the safety of animals and individuals (Bryant, 2008), event management needs to have an incident response plan (Soomaroo & Murray, 2012). However, few studies have been published about event management's knowledge of incident response during large-scale equine events.

### **Purpose**

The purpose of this study was to describe American Quarter Horse Association event managers' perceptions of the important aspects of preparedness for a natural

disaster and components of a plan for how to deal with natural disasters during large-scale equine events.

### **Objectives**

1. Describe AQHA event managers' perceptions concerning current incident response plans for large-scale equine events.
2. Describe AQHA event managers' perceptions about what should be included in an incident response plan for large-scale equine events.
3. Describe AQHA event managers' perceptions about what should not be included in incident response plans for large-scale equine events.

### **Scope**

This study included AQHA certified show managers from the U.S.

### **Significance of the Study**

This study addresses knowledge gaps in incident response planning for large-scale equine events. A better understanding and integration of incident response planning for large-scale equine events will help uncover areas in which event managers need more information. Loss of life, property, and income can be avoided by having an incident response plan (Bryant, 2008, p. 112).

Furthermore, an understanding of the views of what should and should not be included in an incident response plan for a large-scale equine event will be gained. Having an understanding of how to prepare for a disaster is beneficial (Bryant, 2008). "If we are aware of and prepared for what could happen, we will be better equipped to deal with unforeseen and unexpected events..." (Bryant, 2008).

## **Assumptions**

This study was conducted under the following assumptions:

1. AQHA has an incident management plan for natural disasters for show managers to implement at shows.
2. Show managers are involved and up-to-date on incident management practices and regulations established by AQHA.
3. AQHA show management knowledge increases with AQHA show management years of experience.
4. The respondents answered the questions honestly and to the best of their knowledge.

## **Limitations**

The following limitations were identified for this study:

1. The study observed one population and may not benefit different populations.
2. Panelists' definitions of natural disasters may differ.

## **Definition of Terms**

The following terms were defined as follows for use in this study:

**AQHA:** American Quarter Horse Association. It is the world's largest breed registry association and is committed in preserving the history and promoting the Quarter horse. AQHA is located in Amarillo, Texas (American Quarter Horse Association, 2014a).

**Crisis:** Is any type of situation that is harmful or threatens the integrity of an organization (Clawson-Freeo, n.d.).

**Disaster:** Is an event that causes destruction or devastation, sometimes resulting in loss of life or property (Mish, 1999).

**Equine:** Relating to or resembles a horse or horse family (Equine, 2014).

**Exhibitors:** Person who displays an item or talent for others to view (Mish, 1999).

**FEMA:** Federal Emergency Management Agency, FEMA - main objective is to map-out the federal government's role in preparedness, mitigation, response, and recovery for domestic disasters (Federal Emergency Management Agency, 2014).

**Horse:** A large hooved mammal that has a plant-based diet (Horse, 2014).

**Incident management:** is a process in which the main goal is to lessen the severity of the impact and return services back to normal as quickly as possible (State of Oklahoma, 2014).

**Innovation:** An idea or object that is observed to be new to the individual or group (Rogers, 2003).

**Mitigation:** The act of preventing or reducing a disaster and its effects (FEMA, n.d.).

**Natural disaster:** "Is categorized as one of the following: drought, earthquakes, extreme heat, floods, hurricanes, landslides and debris flow, severe weather, space weather, thunderstorms and lightning, tornadoes, tsunamis, volcanoes, wildfires and winter storms and extreme cold" (Ready.gov, 2014).

**Preparedness:** Being prepared for a future disaster or emergency incident. This would include having a plan of action (FEMA, n.d.).

**Recovery:** Putting back the pieces after the disaster is key. How well this is done can determine the longevity and comfort level of recovery (FEMA, n.d.).

**Response:** After a disaster strikes, how an individual responds can determine the outcome. By properly responding to the incident, there can be less damages incurred or endured (FEMA, n.d.).



## CHAPTER II

### REVIEW OF LITERATURE

The equine industry is a vast industry that generates millions worth of income and jobs annually and involves many different individuals. An equine event is one avenue of the industry. A natural disaster can target an equine event without warning and last for an unknown amount of time. Due to the small amount of research in this area, the purpose of this study was to gain the views of AQHA show managers on what they thought should be included in preparing for an equine event to handle a natural disaster. Prior planning can reduce economic loss, minimize destruction, and prevent the loss of life.

#### **Equine Industry**

According to a study by Deloitte Consulting LLP for the American Horse Council Foundation in 2005, the equine industry is diversified and has a wide range of activities across different regions. Those include breeding, racing, training, and showing (American Horse Council, 2014). The study also refutes the idea that being involved in the equine industry is only for wealthy individuals. The equine industry contains hobbyists to professional competitors (American Horse Council, 2014). The study showed that individuals in the equine industry have varying amounts of income with 34% of horse

owners having a yearly income less than \$50,000 and 28% have a yearly income of more than \$100,000 (American Horse Council, 2014). Forty-six percent of horse owners have an income between \$25,000 and \$75,000 (American Horse Council, 2014). This variety of horse owners remain involved in the industry through different types of associations and organizations, each contributing diverse variables to the industry and engaging a range of participation (American Horse Council, 2014).

### **American Quarter Horse Association**

The American Quarter Horse Association (AQHA), the world's largest equine breed association, is located in Amarillo, Texas, and sanctions numerous national and international equine events (American Quarter Horse Association, 2014a). AQHA was created by a group of horse industry individuals to save a bloodline that was nearly extinct (American Quarter Horse Association, 2014a). Bob Denhardt was one of the individuals who pushed for the creation of AQHA. Denhardt was hired by *Western Horseman* to write a story about a little known group of horses known as Steeldust horses, or as better known today, Quarter Horses (American Quarter Horse Association, 2014a). Through his research about Quarter Horses, Denhardt became convinced this breed of horse should have its own association. In 1940, AQHA was created. AQHA has registered more than 5 million horses since it first started in 1940 (American Quarter Horse Association, 2014a). Denhardt later wrote,

We doubted if there were over 300 horses of the type we wanted to be registered in Texas and probably less than a thousand in the country. We were trying to preserve a nearly extinct line... We misjudged what the future would hold for the Quarter Horse. (American Quarter Horse Association, 2014a)

Over the years, AQHA has grown into a large association (American Quarter Horse Association, 2014a). “It exists for the purpose of collecting, recording and preserving the pedigrees of Quarter Horses, and stimulating and regulating matters which pertain to the history, breeding, exhibition, publicity, racing or improvement of the Quarter Horse breed” (American Quarter Horse Association, 2013, p. 20).

### **Oklahoma Equine Industry**

The equine industry has grown vastly in Oklahoma over the past century (Freeman, 2009). The American Horse Council has seen an increase in horse numbers from about 225,000 in 1986 to 278,000 in 1996, an increase of 2.3 percent, and then 326,000 in 2005, per increase of 1.9 percent (Freeman, 2009). Over the course of the state’s history, horses have gone hand-in-hand with the source of revenue and quality of life for Oklahomans, and the industry has helped shape the state to what it is today (Freeman, 2009).

Through the years, Oklahoma has established a reputation as a national location for different horse activities and businesses (Freeman, 2009). A wide expanse of breed associations are represented in the state (Freeman, 2009). National and world-level horse shows have been held in Oklahoma, including the International Arabian Horse Fair, Quarter Horse World Show, the Rosebud, the World Paint Horse Show, the Grand National and World Championship Morgan Horse Show, the National Reining Horse Association Championship, and the Silver States Cutting Futurity (Everett, 2009).

Along with breeding, training, and showing, the horse industry also has brought revenue by way of equine gear, feed, and tourism attractions (Everett, 2009). The

economic impact of the equine industry in Oklahoma was recorded at \$762 million in 1999 and increased to \$3.3 billion in 2005, with 32,613 jobs supported. These numbers include tourism and travel due to the equine events in the state (Everett, 2009). The economic impact of equine activities is so significant for Oklahoma that many small towns have invested large amounts of revenue and time into equine facilities. Even small community rodeos or local horse shows contribute significantly to the Oklahoma economy (Freeman, 2009).

As with horse numbers, the amount of investment horse owners have in horse operations varies between those involved for business and hobby reasons. A 1992 study conducted by Oklahoma State University Master of Science candidate L.A. Elliot compared horse activities in two different counties in Oklahoma (Freeman, 2009). The study suggested the average investment as a professional individual in the industry for property, equipment, and different supplies amounted to \$80,000 per owner (Freeman, 2009). Those owners involved in the industry as a hobby averaged an investment of \$20,000 per owner (Freeman, 2009). The averages did not include land investments (Freeman, 2009). A recent survey showed the investment made by horse owners in land, animals, and facilities is an average of \$220,000 per owner (Freeman, 2009).

Organizations such as the Oklahoma Horse Industry Council were created to monitor the expansion and promotion of the horse industry (Oklahoma Horse Industry Council, 2014). The horse industry consists of various types of activities, such as rodeo, that are prevalent in Oklahoma (Davis, 2009). According to Dale Yerigan, general manager of the Oklahoma City-based International Professional Rodeo Association; “A rodeo price structure is usually quite a bit cheaper than your ballgames, concerts, things

like that. You can still take a family to a rodeo for an \$8 to \$12 ticket. That leaves it to where the average people who are still working and making a living can still enjoy that for entertainment” (Davis, 2009, p. 1).

AQHA has a presence in Oklahoma (American Quarter Horse Association, 2013). Oklahoma is ranked number three in the 2013 top-ten membership states for AQHA with 12,472 members (American Quarter Horse Association, 2013). Oklahoma also ranks third in the number of American Quarter Horse owners in the United States. There are 37,320 Quarter Horses in Oklahoma (American Quarter Horse Association, 2013).

### **Incident Management**

According to the Oklahoma Office of State Finance Information Services Division, the primary goal of incident management is to restore services back to normal as quickly as possible and to reduce negative impacts from the disaster (State of Oklahoma, 2014). An incident management strategy is needed during an event where humans/animals gather together, for the safety of all of those involved (Bryant, 2007). The United States Department of Homeland Security has formed an incident management system on a national level called the National Incident Management System (United States Department of Homeland Security, 2008). NIMS provides an approach to guide departments and agencies at varying levels of governmental, nongovernment, or private sectors to work together to prevent and protect against detrimental incidents that could ensue in a loss of property or life (United States Department of Homeland Security, 2008).

Not all organizations will operate on a national scale, but the NIMS includes components that can be applied to any type or size of organization to help in incident response techniques (United States Department of Homeland Security, 2008). The NIMS components include preparedness, communications and information management, resource management, and ongoing management and maintenance (United States Department of Homeland Security, 2008).

Preparedness can be defined as being prepared before a disaster and includes outlining an effective disaster plan and acting out the plan in different preparedness activities. A preparedness activity should have an assessment of the planning and procedures acted out, different exercises, personnel with different levels of certification and training, and an evaluation and revision section (United States Department of Homeland Security, 2008).

The next component, communication and information systems, are important during a disaster, and many emergency management and response personnel rely on it to provide up-to-date information on what is happening during the incident. The operating system needs to use common language so that different agencies can understand each other (United States Department of Homeland Security, 2008).

Resource management is needed to ensure the availability of resources to support and carry out the incident objectives. Resources include personnel, equipment, and supplies (United States Department of Homeland Security, 2008).

The command and management component outlines a standard incident management structure that can be used for different types of disasters or situations (United States Department of Homeland Security, 2008).

The ongoing management and maintenance component consists of two parts, the National Integration Center and supporting technologies. The NIC helps with the coordination, implementation, and any needed adjustments of the NIMS (United States Department of Homeland Security, 2008). Supporting technologies recognizes that the need for better incident--related technology will increase with the growth of incident management. This will include research and development (United States Department of Homeland Security, 2008).

The NIMS components are important factors in incident management (United States Department of Homeland Security, 2008). Further aspects of emergency management can reduce disaster impacts (Lindell, 2013). Three components are hazard mitigation, emergency preparedness, and disaster recovery (Lindell, 2013). Hazard mitigation can be defined as actions performed to decrease the risk of loss of life or property in the event of a hazard (Lindell, 2013). Emergency preparedness is practices that are designed to provide resources needed in the event of a disaster before the disaster strikes (Lindell, 2013). Disaster recovery helps in stabilizing the community after a disaster strikes and returning the community to normal as quickly as possible after a disaster (Lindell, 2013). Each of these components is flexible to fit an organization's needs (Lindell, 2013).

When creating a preparedness plan, there are four essential parts that need to be part of the overall plan; mitigation, preparedness, response, and recovery (Bryant, 2008). Mitigation is the the act of preventing or reducing a disaster and its effects (FEMA, n.d.). Preparedness is being prepared for a future disaster or emergency incident. This would include having a plan of action (FEMA, n.d.). Response happens after a disaster

strikes, and how an individual responds can determine the outcome. By properly responding to the incident, fewer damages may be incurred or endured (FEMA, n.d.). Recovery is putting back the pieces after the disaster. How well this is done can determine the longevity and comfort level of recovery (FEMA, n.d.).

A comprehensive preparedness plan should be used for multiple types of hazards (FEMA, n.d.). By having a plan in place, the severity of a disaster can be lessened, and lives of humans and animals can be saved (FEMA, n.d.). As the following diagram shows, a preparedness plan should be continuous, each step does not necessarily go in a specific order, and is a continual process.

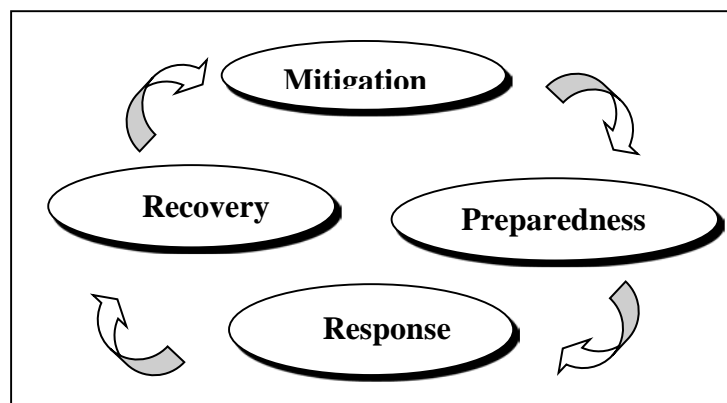


Figure 1: The Four Phases of Emergency Management (FEMA, n.d.).

### **Natural Disasters**

Disasters, including natural disasters, are one danger that can negatively affect any type of organization (Lindell, 2013). In 1992, the U.S. Federal Emergency Management Agency decided on the following definition of a disaster; “an event that results in large numbers of deaths and injuries; causes extensive damage or destruction of facilities that provide and sustain human needs; produces an overwhelming demand on state and local response resources and mechanisms; causes a severe long-term effect



on general economic activity; and severely affects state, local, and private sector capabilities to begin and sustain response activities” (Bryant, 2008, p. 108). A natural disaster is categorized as one of the following: drought, earthquakes, extreme heat, floods, hurricanes, landslides and debris flow, severe weather, space weather, thunderstorms and lightning, tornadoes, tsunamis, volcanoes, wildfires, and winter storms and extreme cold (Bryant, 2008). A management plan should address the varying disasters that could affect the organization (Perry, 2003).

A natural disaster can create casualties, damage, social, demographic, political, and economic impacts (Lindell, 2013). The type and size of the disaster, along with the preparedness of the community affected, will dictate the severity and type of impact (Lindell, 2013).

### **Diffusion of Innovation Theory**

The need for large-scale equine events to have incident response plans that are consistent with federal, state, local, and an organization’s own pre-determined safety guidelines and that are fully executed lies within the theory of diffusion of innovations (Tomascik, 2011). Fidler and Johnson (1982) suggested that organizations need to be able to constantly adapt to new ideas and concepts to survive and have the most preventive measures when it comes to disaster management. Organizations need to recognize that varying innovations can and will yield expected benefits when adopted and used (Downs & Mohr, 1976), and adopting incident response plans based on federal, state, and local procedures will help organizations that manage animal-related events minimize disaster impacts and will raise exhibitor and public safety (Tomascik, 2011).

Diffusion may be understood as the process of presenting and sharing a new idea, practice, or object to individuals or a group over a period of time (Rogers, 2003). An innovation is the idea, object, or practice that is presented for adoption to individuals or a group (Rogers, 2003). The theory explains how individuals or a group can take a new idea, adopt it, and integrate it into use (Robinson, 2009). The theory can be divided into four elements: innovation, communication channels, time, and social system (Rogers, 2003).

## Innovation

Innovations can be a variety of objects or ideas (Rogers, 2003). Technology innovation is one of the most common innovations (Rogers, 2003). How a society or an individual adopts an innovation depends on five factors that influence the rate of adoption: relative advantage, compatibility, complexity, trialability, and observability (Rogers, 2003). Figure 2 outlines the rate of adoption and the different variables to consider when implementing an innovation.

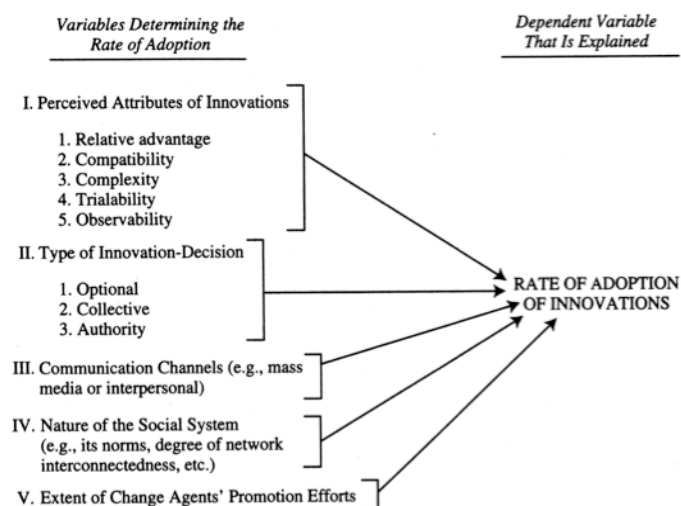


Figure 2. Variables Determining the Rate of Adoption of Innovations (Rogers, 2003 p. 222).

**Relative Advantage.** When an innovation is thought of as more usable or better than the idea before it, it is called relative advantage (Rogers, 2003). Relative advantage can be measured economically or socially (Rogers, 2003). The more individuals that perceive the innovation as beneficial, the quicker the rate of adoption will be. The rate of adoption can be determined by how quickly an innovation is adopted by an individual or a group of individuals that the innovation was introduced into (Rogers, 2003). By promoting an incident management plan as a positive, needful measure, organizations could increase the rate of adoption of these practices at large-scale equine events.

**Compatibility.** The second element of the theory is compatibility. Compatibility is evaluated by how fully or quickly the innovation was perceived by the society based on existing values and experiences (Rogers, 2003). If an idea does not mesh with the values of the society that the innovation is trying to merge into, then the innovation likely will not be adopted and used (Rogers, 2003). Most individuals find it difficult to change their values for something new (Rogers, 2003). For an innovation to succeed, the author or creator of the innovation needs to learn in-depth about the society by which it will be adopted (Rogers, 2003). Learning about the society can increase the rate of adoption. Frequently, the rate of adoption is slow because the society will have to adopt a new value system, which is not always easy (Rogers, 2003).

**Complexity.** The third factor of the theory is complexity. Complexity is described as how difficult the new innovation is (Rogers, 2003). The harder or more complicated the innovation is, the less likely an individual or society is to adopt it (Rogers, 2003). Ease of use and understanding is essential for an innovation to succeed (Rogers, 2003).

**Trialability.** If an innovation first can be used on a trial basis instead of being pushed onto society immediately, the likelihood of adoption is much higher than trying to switch to the new innovation straightaway (Rogers, 2003). In 1943, Ryan and Gross at Iowa State University conducted a study with the adoption of hybrid seed corn by Iowa farmers. Ryan and Gross found that every one of their Iowa farmer participants adopted hybrid seed corn by trying it on a partial basis first and then fully adopting the innovation as a whole (Rogers, 2003). By only planting part of their fields with the hybrid seed corn, the farmers were able to test how well the hybrid seed corn worked without losing an entire field crop if the hybrid seed corn did not take. This example shows that having a trial basis for an innovation helps integrate the innovation more easily into an individual's everyday use (Rogers, 2003).

**Observability.** The last factor of the theory is observability. Observability is how well the results of the innovation can be seen by others (Rogers, 2003). The easier it is for an individual to see the proof that the innovation works, the quicker the rate of adoption (Rogers, 2003). An example Rogers (2003) gave was the adoption of solar water-heating in California. Adopters of solar water-heating were found in clusters across neighborhoods, with three or four adopters located within the same block. Individuals were able to observe the use of solar water-heating from their neighbors, speeding up the rate of adoption for the innovation (Rogers, 2003).

Innovations that are seen by individuals or groups as having higher compatibility, trialability, and observability and less complexity are more likely to be adopted and used (Rogers, 2003). Past research has shown that these five qualities are important to innovations and often determine rate of adoption (Rogers, 2003).

## **Communication Channel**

The second element, communication channel, is the way information is conveyed from one individual or group to another (Rogers, 2003). One of the primary features that determines how fast an innovation will be communicated to and taken up by individuals or a society is the number and repetitiveness of communication channels (Fidler & Johnson, 1982). To be adopted, an innovation needs to be first transmitted. The success of adoption of an incident management plan can be associated with how well and in what way the plan was communicated. The efficiency of a communication channel also is an important factor because this ultimately can determine the cost effectiveness of implementing the innovation (Fidler & Johnson, 1982).

Three types of communication channels may be used: mass media, interpersonal channels, and interactive communication. Mass media channels are considered the quickest channel for adoption and the most effective means of disseminating information for potential adopters. They usually involve a medium that reaches a large amount of individuals, such as radio, television, or newspapers (Rogers, 2003). Interpersonal channels also can be used. This involves a face-to-face communication exchange between two or more individuals (Rogers, 2003). Interactive communication happens via the Internet and has become more significant for the diffusion of certain innovations in recent decades because of the use of technology (Rogers, 2003). The type of innovation ultimately could determine which of the three communication channels will be used (Rogers, 2003).

## **Time**

The third diffusion element is time. Time is measured in the diffusion process by three different methods (Rogers, 2003). The first method is how quickly an individual or group goes from the initial knowledge of an innovation to adopting or rejecting it, which is called the innovation-decision process (Rogers, 2003). Second, the innovativeness of an individual plays a large factor (Rogers, 2003). How early or late an individual learns about or decides to try the innovation compared to other individuals of the same group can determine if it will be adopted (Rogers, 2003). The third method looks at the rate of adoption in a system for an innovation (Rogers, 2003). If an innovation is accepted quickly by individuals in a system, it has a greater rate of adoption over a short amount of time and vice-versa (Rogers, 2003).

When an innovation is adopted or rejected in a system, it usually happens in a time-ordered sequence that includes five steps: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003). The time sequence can vary from this order. The acceptance of an innovation can be contingent on the length of time it takes for that innovation to be implemented (Rogers, 2003). If the innovation takes a long time to be used, that could hinder the popularity of the innovation (Rogers, 2003). Likewise, if the innovation is quickly adopted, the innovation could be more successful (Rogers, 2003).

## **Social System**

The social system is the fourth element of the diffusion process. A social system is reflected to be interconnected units that have a common goal of solving a joint problem (Rogers, 2003). Parts of a social system can be individuals, groups, or

organizations (Rogers, 2003). Realizing the type of society an innovation is going to be adopted into can help the success of the rate of adoption (Rogers, 2003).

### **Diffusion of Innovation Case Study**

A case study by Wellin (1955) showed each element of the diffusion process. In the study, a public health service tried to introduce water boiling, the innovation, to purify contaminated water, in to the Peruvian village of Los Molinas in a two-year campaign. The public health worker visited pre-selected families between 15 and 25 times to convince the villagers to boil their water by giving the villagers a lesson on germs (Rogers, 2003). The case study illustrated the innovation as the practice of water-boiling, communication channel as the public health worker, time frame as the two-year campaign, and social system as the villagers (Rogers, 2003).

Water boiling was not adopted by the village due to different variables (Rogers, 2003). The villagers believed boiling water was only for the sick, thus, the healthy villagers did not want to be conceived sickly and would not boil their water (Rogers, 2003). The communication channel, the public health worker, was unfamiliar to the villagers and was not trusted to introduce an innovation into their social system (Rogers, 2003). Villagers who were considered outsiders tended to adopt the water-boiling practice since they already were branded as such by the other villagers (Rogers, 2003). Last, the public health worker used germ information to present the need for water boiling to the villagers. Many of the villagers had no previous knowledge of germs and were not convinced to change (Rogers, 2003).

If the process of diffusion is to be successful, each element of diffusion needs to be analyzed thoroughly (Rogers, 2003). Likewise, when implementing an incident

management plan, each part of the diffusion of innovation process needs to be considered (Rogers, 2003).

### **Innovation-Decision Process**

When introducing an innovation into a society, an innovation-decision process exists that an individual and or group must go through before adoption of the innovation is complete (Rogers, 2003). The innovation-decision process is the process through which an individual or group goes before completely gaining an understanding of the innovation and deciding whether to adopt or reject the idea (Rogers, 2003). The process has five steps: knowledge, persuasion, decision, implementation, and confirmation (Rogers, 2003).

The decision-making process starts with knowledge, as the individual first must be exposed to the innovation (Rogers, 2003). Persuasion is the second step. This is where the individual or group forms an opinion for or against the innovation (Rogers, 2003). The decision phase is where the individual or group partakes of activities that lead to adopting or rejecting the innovation (Rogers, 2003). Implementation is where the individual or group uses the new innovation (Rogers, 2003). Last, confirmation is where the individual or group seeks validation for their choice or adopting or rejecting the innovation (Rogers, 2003). The individual or group could decide to reverse their initial decision if they experience conflicting messages about the innovation (Rogers, 2003). To best understand how to integrate a new innovation into a society, understanding the process is a must (Rogers, 2003). The process varies in outcome and length of time per situation, so no two scenarios are alike when introducing an innovation (Rogers, 2003).



## CHAPTER III

### METHODOLOGY

This study sought to describe the perceptions of AQHA event managers on the important aspects of planning for a natural disaster during large-scale equine events. Review of the literature revealed a lack of evidence in this area, indicating a need for further research. This study can be used by show managers to build upon or implement a management plan for large-scale equine events. Furthermore, individuals in the horse industry can use the information as a basis for building or improving an incident management plan for personal use.

#### **Institutional Review Board**

According to Oklahoma State University policy and federal regulations, research studies using human subjects must be approved before research begins. This study was reviewed and approved by the Oklahoma State University Institutional Review Board and assigned study number AG 1447 (Appendix A).

#### **Research Design and Methodology**

This descriptive study was conducted using the Delphi method. The Delphi

technique is a mixed-method approach to data collection that is both qualitative and quantitative. By using a mixed-method design, the researcher is able to collect expert opinions that can be in-depth and informative (De Villiers, De Villiers, & Kent, 2005). The Delphi is a useful instrument that can be used as a learning tool and as a research tool simultaneously (Gupta & Clarke, 1996) and is a flexible research method that is commonly used when information or knowledge about a problem is incomplete (Skulmoski, Hartman, & Krahn, 2007).

A mixed-method design uses both qualitative and quantitative methods (Terrell, 2001). The primary purpose of using this type of design is to gain a broader perspective than what could be had by using another collection method (Terrell, 2011). Also, a strength of this method is the ability to collect both quantitative and qualitative data simultaneously (Terrell, 2011). This allows for perspectives from each type of data.

The primary purpose of the Delphi technique is to gain a combined understanding of a subject from a group of experts (Gupta & Clarke, 1996). Often is used to collect opinions on a particular subject (De Villiers et al., 2005). What makes the Delphi study unique is the use of a panel of experts (De Villiers, et.al., 2005). An expert is defined as a person with a high level of knowledge in a particular area and who is regarded highly by other professionals within the industry (De Villiers et al., 2005). By using a panel of experts, it helps ensure correct and in-depth knowledge is collected.

The Delphi technique is used to gather responses from a panel of experts and used to create “one useful statement or position” (Ramsey & Edwards, 2012, p. 44). There are three types of Delphi techniques: conventional, policy, and modified (De Villiers et al., 2005). The modified Delphi was used for this study. It is considered modified because

after each round, a revision was done to the instrument and because the instrument was resented to the entire sample population (Skulmoski et al., 2007). A modification can include the number of participants, extent of initial question, number of rounds, and the method of communication or interaction (Skulmoski et al., 2007).

The Delphi uses a group approach when interacting with participants. All of the participants are anonymous, making less pressure for the individuals in the group to conform or interact with a dominating individual who could sway their opinions (Gupta & Clarke, 1996).

### **Population and Sample**

The target population for this study was current U.S. American Quarter Horse Association (AQHA) show managers because they are considered professionals with extensive knowledge of the equine industry. The criteria to be an AQHA show manager include being 18 years or older and a current member of AQHA, consistently reviewing current material created by AQHA to execute a show properly, and attending an AQHA workshop in the past five years. An AQHA show management workshop is an in-depth workshop designed to guide show managers in creating and implementing AQHA-approved shows. The population of AQHA show managers includes a mix of females and males ranging in age, education, economic status, geographic location, and employment. The size of the population was 352 individuals spread throughout the United States.

In the Delphi method, the sample for the panel of experts usually consists of 15 to 30 participants who are experts in the same discipline (De Villiers et al., 2005). Increasing the sample size to more than 30 individuals was deemed unnecessary, as it has been found that using more than 30 participants does not improve results (De Villiers et

al., 2005). The sample size for this study included 75 participants who are current U.S. AQHA show managers. The random sample of show managers was generated using a random sampling program. Seventy-five individuals were selected due to the possibility of a less than 50% response rate. A list of current AQHA show managers was found on the AQHA website and used to make the study population. All U.S. AQHA show managers with email addresses were selected and placed into an excel spread sheet which was numbered 2 through 323. A random sampling software was used to generate 75 random numbers between 2 through 323. The numbers were then compared to the list of AQHA show managers. The 75 individuals selected was used as the sample population for the study.

### **Instrumentation**

A three-round, mixed-method survey was used to collect the perceptions of AQHA show managers about incident management for natural disasters during large-scale equine events. The instrumentation was modified after each round.

In round one, a scenario and a broad question was sent to the sample population. The scenario depicted a natural disaster scenario unfolding during an equine event. Open-ended questions were used to ask what natural disaster they thought the scenario was most closely related to and what should be done before a show to prepare to deal with a natural disaster during an event. Demographic questions also were included.

The items gathered in round one were used to create an online questionnaire regarding what the AQHA show managers thought should be included when preparing to deal with a natural disaster at an equine event. The participants rated their levels of

agreement with each item on a 6-point Likert scale including strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree.

Items that reached consensus in round two were removed and items that did not reach consensus were retained on the online questionnaire. The updated questionnaire used the same 6-point Likert scale as in round two, including strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree, and was distributed to the panel to attempt to reach consensus on the remaining items in round three of the study.

### **Validity**

Validity can be defined as producing viable evidence to show that the results of the anticipated study matches its pre-determined use (Creswell, 2012). The validity of the instrumentation means that it measures what it is supposed to measure. Using a panel of experts that is knowledgeable about a particular topic will give greater validity to the instrument because it uses a series of questionnaires to gain expert opinions, which would be considered the accurate view on the particular subject. That is a strength of the Delphi method (De Villiers et al., 2005; Gupta & Clarke, 1996). The experts are professionals in the industry who are informed with current information and practices within the industry, thus having the greatest knowledge of the topic. Validity is the most important characteristic an instrument can have, and the Delphi does this through the use of the panel of experts (Ramsey, 2009).

### **Reliability**

Reliability means that the instrument continually and consistently gets the same results over and over (Creswell, 2012). The Delphi method is a preferred method because

individuals are anonymous, feedback is given as a group and not individually, and it does not require face-to-face interviews, which could taint anonymity (Gupta & Clarke, 1996). By using this type of approach, participants are more likely to give independent feedback free from any outside pressure that could sway the subject's opinion (Gupta & Clarke, 1996). Thus the participants are more likely to give feedback that is stable and consistent through numerous administrations of the instrument. This would give the instrumentation reliability. Also, the Delphi uses a panel of individuals with at least 15 members that are considered experts in their area, which gives reliability to the instrument (Ramsey & Edwards, 2012).

### **Data Collection**

Participants were asked to complete a series of questionnaires over a period of four months.

#### **Round One**

An initial email was sent to the sample population ( $n = 75$ ). The initial email contained a detailed overview of the study, why the study was being conducted, who was conducting the study, why the study was beneficial, and how the study was to be administered (see Appendix B). After 10 days, an email (see Appendix C) comprising a link to a questionnaire which contained the broad question was sent to the participants (see Appendix E). Ten days gave the participants sufficient amount of time to set aside time in their schedule to fully participate in the study. The participants had 20 days to reply. Twenty days was deemed as sufficient amount of time for the participants to complete the questionnaire. A reminder email was sent 10 days after the first email. A phone script was used to elicit more responses in round one (see Appendix D). The

quantitative survey was then sent to the participants to elicit consensus on the survey items. Data from the round one questionnaire were analyzed and categorized, and an online questionnaire was created.

## **Round Two**

The data collected in round one were used to create items for the questionnaire in round two (see Appendix G). The questionnaire contained a response system using a 6-point Likert scale including strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree. The questionnaire asked the participants to identify their levels of agreement or disagreement pertaining to what should be involved in an incident management plan for a large-scale equine event. A link to the questionnaire was emailed to each of the participants, (see Appendix F) and they had 14 days to respond. A reminder email was sent after 7 days (see Appendix F).

Data were analyzed to determine whether consensus was reached on items and to create the questionnaire for round 3 (see Appendix I). The items that had above 75% agreement or below 50% disagreement were considered to have reached consensus and removed. The items that showed 50% to 74% agreement were retained for round three.

## **Round Three**

The items that did not reach consensus in round two were included in the questionnaire for round three. The questionnaire contained a response system using a 6-point Likert scale including strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree. A link to the questionnaire was emailed to each of the

participants, (see Appendix H) and they had 14 days to respond. A reminder email was sent after 7 days (see Appendix H).

Research has found that once round three is reached, sufficient evidence has been collected to determine consensus (De Villiers et al., 2005). Usually by round three, a 97% consensus is achieved (De Villiers et al., 2005). Thus, the study was concluded at the end of round three.

### **Data Analysis**

In round one, the broad question from each participant was analyzed and categorized by the primary investigator. Similar responses were grouped and summarized to create an online questionnaire, which was sent out in round two. Participants were asked to rate their level of agreement on each item in round two and there. The information collected from rounds two and three were analyzed using Microsoft Office Excel® to determine the percentage of agreement for each item. The percentages of agreement were then used to determine if consensus was reached. Items with 75% agreement or above were considered to have reached a consensus and removed, and items of 50% disagreement or below were removed from the survey.

In round one, the participants were asked certain questions pertaining to demographics. The answers were then analyzed and categorized using frequencies and means by the primary researcher, creating a profile of the panel of experts.



## CHAPTER IV

### FINDINGS

The equine industry contributes millions of dollars to the economy and generates numerous jobs annually (American Horse Council, 2014). Different equine activities contribute to this industry (American Horse Council, 2014), such as AQHA equine events. During an event, individuals and equines come far and wide to participate. A natural disaster can happen during an event and can range in severity and how quickly it occurs (Lindell, 2013). AQHA show managers are among the event staff who are the first line of communication for event attendees and participants (American Quarter Horse Association, 2013). The purpose of this study was to describe actions show managers would take to be prepared for incidents that could impact large-scale equine events. This study was designed as a three-round Delphi study using a panel of experts composed of AQHA show managers in the U.S. The show managers were selected based upon their connections to the equine industry and show management knowledge supplied by AQHA.

## Findings

### Professional Characteristics of the Delphi Panelists

American Quarter Horse Association show managers were asked to respond to questions regarding their professional experience. Professional characteristic questions are summarized and reported to shape a profile of the panelists that responded.

AQHA show managers ( $n = 15$ ) reported an average of 10.6 years ( $SD = 11.16$ ) of experience, with a range of 2 to 35 years. Of the 15 respondents, the number of sanctioned shows they have managed ranged from 0 to 250 ( $M = 26.86$ ,  $SD = 65.84$ ,  $Mdn = 7$ ,  $Mode = 0$ ). One individual recorded managing 1,800 shows, creating an outlier in the results. The response was recorded separately as to not skew the data.

Fifty-seven percent ( $n = 8$ ) of the panel had experienced a natural disaster during an AQHA show they managed. One individual ( $n = 1$ ) did not respond. Fifty percent ( $n = 7$ ) of the panel had experienced a natural disaster at an equine event they had not managed. One individual ( $n = 1$ ) did not respond.

The panel of experts was asked five demographic questions to enable the researcher to draw a characterization of the panel. Females made up 46.7% of the panel ( $n = 7$ ), 40% ( $n = 6$ ) were male, and 13.33% ( $n = 2$ ) did not respond. The range of ages for the panel was 49 to 69 years old, making the mean 57.5 years old ( $Mdn = 60$ ,  $Mode = 49, 50$ ). Two individuals did not respond.

The panel ( $n = 15$ ) included Caucasian ( $n = 11$ ), Native American ( $n = 1$ ), and African American ( $n = 1$ ) individuals. Two individuals ( $n = 2$ ) on the panel did not respond.

Of the respondents ( $n = 15$ ), the highest education attained ranged from high school ( $n = 3$ ), associate's degree ( $n = 1$ ), bachelor's degree ( $n = 3$ ), master's degree ( $n = 4$ ), and doctorate degree ( $n = 2$ ). Two individuals ( $n = 2$ ) did not respond.

The AQHA show managers were asked in what region they resided. The results are provided in Table 1.

Table 1  
*AQHA Region Demographics from Round One*

AQHA Region	Number of Respondents
Region 1	0
Region 2	0
Region 3	2
Region 4	0
Region 5	0
Region 6	1
Region 7	1
Region 8	4
Region 9	3
Region 10	0
No Response	3

### **Round One**

The randomly selected AQHA show managers ( $n = 75$ ) were given a scenario and asked several questions. Of the 75 show managers, 20% ( $n = 15$ ) responded.

The AQHA show managers were asked what natural disaster came to mind when reading the provided scenario. The respondents ( $n = 15$ ) provided a range of responses: tornado, earthquake, severe storm, flood, thunderstorm, lightning, extreme heat, and cold. Some of the respondents answered with multiple responses. One respondent ( $n = 1$ ) did not respond.

The respondents also were questioned about what they would do before a show to prepare to deal with a natural disaster during an event they were managing. The responses are compiled in Table 2.

Table 2

*Actions Identified during Round One that Should Be Involved in Incident Planning for a Large-Scale Equine Event*

---

Appoint a safety director  
Arrange a public address system for sharing information with event attendees  
Arrange for equipment needed to counteract extreme heat (e.g., large fans, coolers, water)  
Arrange services for medical care of animals other than equines that may be at the event  
Arrange services with an equine medicine facility  
Be aware of facility resources that might be available during emergencies  
Communicate with appropriate emergency response agencies about the number of animals expected at the event  
Coordinate emergency procedures with appropriate emergency response agencies  
Coordinate emergency procedures with event facility management  
Create a procedure for notifying RV areas about emergencies  
Create alternate event schedule  
Create an evacuation plan  
Develop a map that identifies all buildings, arenas, other structures and road closures near the facility  
Do nothing  
Have areas that you can relocate horses to that provide a safer environment  
Identify human shelter locations  
Meet with event facility management  
Monitor the weather  
Obtain current area map(s)  
Obtain current facility map(s)  
Obtain information about possible weather conditions  
Obtain information about scheduled road work near the facility  
Obtain information about the facility's ability to handle water run-off  
Plan for alternate class and activity locations within the event facility  
Plan for alternate show attire to accommodate for weather conditions  
Plan for extended breaks to accommodate for weather conditions  
Post 24-hour emergency contact information to be used by event attendees  
Post the location(s) of storm safety area(s)  
Prepare for disasters, regardless of geographical location  
Review the facility evacuation plan  
Tour event facility to identify safe areas for large groups of horses  
Tour event facility to identify safe areas for large groups of people  
Tour event facility to identify safety hazards

## **Round Two**

In round two, the panelists were asked to rate their level of agreement using a 6-point Likert scale ranging from strongly agree, agree, slightly agree, slightly disagree, disagree, to strongly agree on the 34 actions identified during round one. Fifteen individuals responded and reached consensus on 17 items in this round. Table 3 shows the percentages of agreement from round two for each of the actions.

Table 3  
*Levels of Agreement from Round Two*

Actions	% Agreement
Meet with event facility management	100.0%
Identify human shelter locations	100.0%
Obtain information about possible weather conditions	100.0%
Use reliable communication equipment	100.0%
Arrange a public address system for sharing information with event attendee	92.9%
Obtain current facility map(s)	92.8%
Obtain current area map(s)	85.7%
Review the facility evacuation plan	85.7%
Arrange services with an equine medicine facility	85.7%
Be aware of facility resources that might be available during emergencies	85.7%
Coordinate emergency procedures with event facility management	78.6%
Coordinate emergency procedures with appropriate emergency response agencies	78.6%
Create a procedure for notifying RV areas about emergencies	78.6%
Have areas that you can relocate horses to that provide a safer environment	78.5%
Post the location(s) of storm safety area(s)	71.5%
Create an evacuation plan	71.4%
Tour event facility to identify safe areas for large groups of people	71.4%
Tour event facility to identify safety hazards	64.3%
Plan for alternate class and activity locations within the event facility	61.5%
Tour event facility to identify safe areas for large groups of horses	57.4%
Obtain information about scheduled road work near the facility	57.0%
Plan for extended breaks to accommodate for weather conditions	57.0%
Arrange for equipment needed to counteract extreme heat (e.g., large fans, coolers, water)	50.0%
Plan for alternate show attire to accommodate for weather conditions	50.0%
Arrange services for medical care of animals other than equines that may be at the event	42.9%
Create alternate event schedule	42.8%
Communicate with appropriate emergency response agencies about the number of animals expected at the event	42.8%

Obtain information about the facility's ability to handle water run-off	42.8%
Plan for alternate show attire to accommodate for weather conditions	42.8%
Develop a map that identifies all buildings, arenas, other structures, and road closures near the facility	42.0%
Appoint a safety director	35.7%
<hr/> <i>Note.</i> Consensus was reached if 75% or more of the respondents rated the item “agree” or “strongly agree.”	

The item “do nothing” had 100% disagreement.

In round two, the panel also was asked to add any additional comments. Table 4 is a compilation of the comments.



Table 4

*Additional Comments from Round Two*

---

Many of the questions that you are posing should be the responsibility of the site management. As a show manager I have met with facility management prior to the event to make sure they have procedures in place and in the event of a disaster coordinate with them to plan for the event. I have been running several shows where tornadoes and other events have occurred.

many of the items in this questionnaire should be completed before the first horse arrives on the show grounds. Facility coordination / tours / identification especially. But I think all the major areas are covered.

In the situation you described I assume many of the potential disaster issues have been previously considered and the facility has many if not all of them in place. In the more "local" or smaller show I don't believe those issues would be normally dealt with. Prepare for loss of electricity, resulting in no PA, no lighting, limited communications. In some of the questions, a show manager may not have a lot of choice to run the show as scheduled and/or attire requirements of exhibitors. Some sanctioning organizations have requirements that will not waiver, length of a show on a day, time periods of which classes for youth (18 & under), sleeve length, shirt type, coats, jackets, etc. / / While it would be devastating to lose quality show animals, people are always the priority. The show can look for what would be the safest alternative environment some weather disasters would not lend itself to a relocation or evacuation. Sudden storms, winter weather storms would not suggest an evacuation. The larger the show, the more problematic an evacuation would become. A plan may be assuring supplies for extend stays in some cases. / / Floods may or may not come with enough warning. Facility would have the most input in that case. There are shows that use an area that is not typically a horse show grounds. Again, the land owner would have the most input.

First, you must realize that people will not leave their horses. Also, if you have a large show, there is only so much you can do. If you try to get set up for a disaster, you won't have any room left to have a show. / / If barn evacuation is required due to a natural disaster, getting enough people to handle potentially fractious animals will be paramount.

---

The 15 items that reached consensus in round two were removed from the questionnaire for round three.

### Round Three

In round three, the panelists were asked to rate their level of agreement on 17 actions remaining after round two using a 6-point Likert scale ranging from strongly agree, agree, slightly agree, slightly disagree, disagree, to strongly agree. The panel reached consensus on 5 items in this round. Table 5 shows the percentage of agreement from round three for each of the actions.

Table 5  
*Levels of Agreement from Round Three*

Actions	% Agreement
Tour event facility to identify safe areas for large groups of people	100.0%
Create an evacuation plan	85.7%
Plan for alternate class and activity locations within the event facility	85.7%
Tour event facility to identify safe areas for large groups of horses	85.7%
Plan for extended breaks to accommodate for weather conditions	85.7%
Tour event facility to identify safety hazards	71.4%
Plan for alternate show attire to accommodate for weather conditions	71.4%
Prepare for disasters, regardless of geographical location	71.4%
Post the location(s) of storm safety area(s)	57.4%
Arrange for equipment needed to counteract extreme heat (e.g., large fans, coolers, water)	57.1%
Create alternate event schedule	57.1%
Obtain information about the facility's ability to handle water run-off	57.1%
Develop a map that identifies all buildings, arenas, other structures, and road closures near the facility	57.1%
Appoint a safety director	57.1%
Arrange services for medical care of animals other than equines that may be at the event	28.6%
Communicate with appropriate emergency response agencies about the number of animals expected at the event	28.6%
Obtain information about scheduled road work near the facility	14.3%

*Note.* Consensus was reached if 75% or more of the respondents rated the item “agree” or “strongly agree”.

In round three, the panel also was asked to add any additional comments. Table 6 is a compilation of the comments.

Table 6

*Additional Comments from Round Three*

---

We have shows in Northeastern US. In March and April, we plan for snow and ice. Save unloading area, snow removal. Alternate delivery of water incase of frozen pipes. I think all show mgrs already have actions in mind, how to handle their own disasters. We don't usually have tornados here, but I happened to be at a show when we had one. Luckily, no horses or people were injured. Can't say same for trailer. many of the items in this questionnaire should be completed before the first horse arrives on the show grounds. Facility coordination / tours / identification especially. But I think all the major areas are covered.

I feel that the answers to many of these questions have already taken place or have been prepared by the facility itself. For example, if it is a large facility they will already have maps of safe areas, have locations of safe places pre-determined, etc. The facility may have its own safety director, safety office, etc. that I would contact and check with, but I would not have to prepare some of the items discussed.

Many of the questions that you are asking fall under the obligations of the facility that your are utilizing for your event. Having managed shows with over 1000 head of horse in attendance, I have always coordinated with the facility about most of your concerns. The facility should have all of these concerns covered, if they don't then an alternative facility should be chosen. They are great questions that should be answered; however, as an event organizer many of these questions must be coordinated by the facility in questions. Many counties have disaster plans in place currently in many states. I served as the Incident Commander for a Large Animal Evacuation Facility in College Station, TX. We handled hurricane evacuees on many occasions. I would be happy to talk with you about your study and results at any time. I chaired and co-chaired over 50 graduate committees at Texas A&M University. Best of Luck.

As an event manager, we rely on the facility management. They are the ones that know the local conditions, codes and agencies. I visit with each facility manager prior to the event about a the "what ifs". I I think your next survey should be diseminated to facility managers through the League of Agriculture and Equine Facilities. Let their members tell you how prepared they are. Maybe I assuming too much from them.

---

Five items reached consensus after round three.

## CHAPTER V

### CONCLUSION, RECOMMENDATIONS, AND IMPLICATIONS

The equine industry creates many job opportunities and contributes millions to the economy each year through various opportunities such as events for individuals to attend and compete at. An equine event can have many individuals and animals in one location at a time. A natural disaster can happen without warning and range in severity and length of time. Proper incident planning for natural disasters is a must for the safety of all involved. In attempts to describe what should be included in an incident preparedness plan, a three-round Delphi study was conducted. A panel of experts consisting of 15 current American Quarter Horse Association show managers were asked to identify and then reach consensus on what actions/items should be involved in an incident preparedness plan for a large-scale equine event. Respondents ranged in background. Ten had managed an AQHA-sanctioned show and 6 of them experienced a natural disaster while managing the show. Seven others had experienced a natural disaster while at a show that they were not managing. Seven individuals on the panel were female, 6 were male while 2 declined to answer. Respondents ranged in age from 46-69 ( $M = 57.5$ ). The panel was made up of 11 Caucasians, 1 Native American, 1 African American, and 2 chose not to respond. Educational levels varied among the panel of experts. The highest

level of education completed was as follows: high school 3, associates degree 1, bachelors 3, masters 4, doctorate 2, and 2 respondents chose to answer.

In round 1 the AQHA show managers were asked what an incident response plan for a large-scale equine event entailed. Once the responses were gathered, an online questionnaire was created consisting of 34 items. Each respondent was then asked their level agreement on a 6-point, Likert scale ranging from strongly agree, agree, slightly agree, slightly disagree, disagree, to strongly disagree. Sixteen items were found to have 75% or higher agreement. One item was found to have 100% disagreement. These 17 items were then considered crucial elements to be part of an incident response plan.

In round 3, the panel of experts were then asked their level of agreement again. Five items were found to have 75% or higher agreement. These 5 items were then considered crucial elements to be part of an incident response plan. Due to the minimal response in round 3 and the difference in agreement on the 12 remaining items, it was concluded to not do a round 4.

## **Conclusions**

### **Conclusions for Objective 1: Views Concerning Current Incident Response Plans**

AQHA show managers' views varied greatly concerning current incident response plans for large-scale equine events. AQHA has material for show managers to use as reference, but there is no mandatory, specific incident response material. The *Show Management Guidelines and Procedures* pamphlet states it is a "suggestion rather than a rule" (American Quarter Horse Association, 2014c, p. 3). Since the material is not required and has only suggestions for a manager to reference, it is not mandatory for show managers to learn it. Thus, they do not all have the same idea of what should be

part of the current incident response plan for an equine event. A major road block in introducing a new idea or concept into an organization is the adoption of the practice (Fidler & Johnson, 1982). Incident response practices have not fully diffused into AQHA show managers' event preparedness plans.

A variety of views on incident response at equine events exist among the panel. Some of this might have been due to years as a show manager, level of experience, and the number of natural disasters experienced during events. Going through a natural disaster can raise an individual's awareness for the need of an incident response plan (Lindell, 2013). One common comment that was expressed numerous times was that much of the incident response planning items already should be addressed by the event facility. FEMA urges the public to have a broad disaster plan that could be integrated to fit numerous disasters for any size organization (Federal Emergency Management Agency, 2014). Also, it is specifically stated in the NIMS booklet, set forth by the U.S. Department of Homeland Security, that "organizations should develop procedures and protocols that translate into specific, action-oriented checklists for use during incident response operations" (United States Department of Homeland Security, 2008, p. 19). Without having some sort of plan set forth by the organization, AQHA show managers are relying heavily on event facilities to have incident plans. It would be beneficial for AQHA show managers to have their own incident response plans to implement at events.

Furthermore, just because an event facility has a variety of emergency procedures in place does not mean that AQHA show managers should not have their own plans that could be implemented at the events. In Bryant's article, *Livestock and Natural Disasters*, she used the incident of Hurricane Katrina as a prime example of how relying on

another's incident response plan can have detrimental impacts (Bryant, 2008). When Hurricane Katrina hit on August 29, 2005, the destruction caused by the storm was unanticipated and left an estimated \$125 billion of damage over a four-state radius (Bryant, 2008). When the levies broke in New Orleans, the city experienced 80% total flooding (Bryant, 2008). No one was fully prepared for the levies to break, since most were relying on the levies as their "incident response plan." Few had individual incident response plans and were not prepared to evacuate their animals, resulting in an estimated loss of \$30 million in livestock (Bryant, 2008). This is a large economic loss that could have been lessened by having an individual incident response plan in place instead of relying on another's incident response plan.

Overall, the AQHA show managers did not have the same outlook on an incident response plan. All of the show managers are from the same association and should have the same type of incident response plan that is provided in AQHA show manager training material. The NIMS outlines that an organization should have an integrated emergency plan that uses similar format, easily understandable terminology that is used throughout, and common methods of dispatch and communication to have an effective plan (United States Department of Homeland Security, 2008). The show managers did not have a common concept of an incident response plan.

The responses given by AQHA show managers in regard to what is already included in an incident plan pulled mainly from past experiences and were region-specific. For example, in regions where tornadoes are common, show managers were quick to point out their plans for such an event, but little to no thought was taken in consideration of other natural disasters that could occur, such as hurricanes or blizzards.

Granted, while the likelihood of a tornado and blizzard happening in the same region over a short time span is unlikely, an incident plan should not overlook such an occurrence.

### **Conclusions for Objective 2: Views on What Should be Included in an Incident Response Plan**

A few themes were prevalent regarding what should be included in an incident response plan, according to AQHA show managers: coordinate with event facility and other emergency response agencies, monitor weather conditions, have proper communication tools, have equine medical services available, have proper shelter, and create alternate plans.

According to NIMS, an incident response plan should integrate different department agencies, other emergency personnel, and relevant individuals and/or agencies (United States Department of Homeland Security, 2008). By having a set incident response plan that involves individuals at the equine event, individuals know what the plan of action is and what needs to be done. When dealing with the evacuation of animals, certain procedures and protocols need to be followed to ensure safety (Bryant, 2008). Horses have unique needs that need to be addressed by an incident plan (Linnabary et al., 1993). Things such as transportation or finding a proper evacuation area can take time, which during an emergency, might not be sufficient unless there has been planning ahead of time (Bryant, 2008).

FEMA encourages the use of different warning systems in the event of a possible natural disasters (Ready.gov, 2014). Of the warning systems, listening and monitoring of



weather conditions is encouraged to best prepare for the type of incident response needed (Ready.gov, 2014).

The use of proper communication tools is a must to reduce social hardships (Gillespie, 1993). Communicating an incident response plan variables to attendees at an equine event is much easier if a reliable system to do so is in place. Also, for different agencies or organizations to work together effectively, incident-specific communication forms need to be established in the incident response plan (United States Department of Homeland Security, 2008).

The AQHA show managers agreed that being able to communicate to event attendees needs to be part of an incident plan. Being able to reach attendees at a moment's notice could be difficult, especially if the event is spread across a large area. Different forms of communication among event staff and attendees should be used, since some individuals will use different mediums for information.

Having proper equine care and medical services available is a necessary part of an incident response plan (Linnabary et al., 1993). If evacuation is needed, FEMA states not to leave your pet behind (Federal Emergency Management Agency, 2015). If an animal becomes hurt during a natural disaster, or becomes injured, proper care and handling equipment will needed as part of the incident response plan (Federal Emergency Management Agency, 2015). Outlined in NIMS, a part of an emergency structure calls for technical specialists that are assigned in specific areas (United States Department of Homeland Security, 2008). Veterinarians would be considered a technical specialists and

can contribute medical services and expertise during a natural disaster (United States Department of Homeland Security, 2008).

During an equine event, if a natural disaster strikes, alternate plans may need to be implemented to keep the event going. Such things that were brought up by the AQHA show managers were to bring an event indoors if it is outdoors.

### **Conclusions for Objective 3: Views on What Should not be Included in an Incident Response Plan**

The panel of experts agreed that doing nothing in the way of an incident response plan was not an acceptable plan of action. Doing nothing could be detrimental; “the greatest problem occurs from lack of planning for an emergency event, the greatest opportunities are in resolving this problem” (Linnabary et al., 1993, p. 153). An incident response plan can help in reducing damages, saving lives, or reducing injury of humans and animals, better serving attendees at events, and lessening economic losses for all involved (Gillespie, 1993).

Having a plan is essential to save lives and lessen damages (Quarantelli, 1988). Not only is a plan needed, but also the plan must be refreshed in individuals’ minds. Individuals can become more relaxed and less ready for a natural disaster if a disaster has not occurred over a period of time (Quarantelli, 1988). Keeping event attendees aware of certain disaster situations and not relying on event facility management to do so is something AQHA show managers need to think about.

## **Discussion**

The panel of experts did not reach agreement on all items after round three. Much of the disagreement could have been due to the thinking that the event facility is responsible for having an incident response plan in place. Certain items such as obtaining information about scheduled road work near the facility, having a map of the event property, touring the facility to identify safety hazards, obtaining information about the facility's ability to handle water run-off, and posting location(s) of storm safety area(s) did not reach agreement. All of these items are facility-related. Further, three out of the four comments made in round 3 stated the responsibility should lie with the event facility. One expert commented that this is the responsibility of the facility because "they are the ones that know the local conditions, codes and agencies." While this may be true, complications could arise in assuming the facility is prepared.

The panel of experts did recognize the importance of having adequate medical care and a safe place to shelter the horses during a natural disaster. Owners have reported that they would risk their own lives to try to evacuate their horses (Linnabary et al., 1993). Some of the attendees' livelihoods come from their equine interests. Thus the likelihood for event attendees to try to evacuate their horses is high. If everyone is trying to evacuate their horses at the same time, problems such as congestion in the barn or on the roadway could occur. Also, the horse industry does contribute a large sum of money to the economy (American Horse Council, 2014). Thus having an incident response plan to protect not only event attendees, but also the equine attendees, is beneficial economically.

A comprehensive emergency management plan should be continuous, and each step does not necessarily go in order. The four steps are mitigation, preparedness, response, and recovery (FEMA, n.d.). The panel of experts were asked in round one to read a scenario and the comment what they thought should be included in a plan to handle the scenario. The responses the AQHA show manager panel gave varied. Some responses focused more on mitigation, which emphasizes a long-term plan to reduce disaster effects. Building relationships and communicating with event facility and other area emergency agencies could be considered part of a long-term plan.

The other items the panel of AQHA show managers came up with were more geared toward the preparedness step. The preparedness cycle is continually changing (FEMA, n.d.) and a few of the items the show managers identified displayed that. Arranging medical services for equine attendees, having reliable communication tools to be able to share pertinent information, monitoring weather conditions for any impending weather at the event, identifying shelter locations, and having an evacuation plan are part of the preparedness step the panel reached consensus on. The panel of experts was able to identify items that pertain to two parts of the emergency management cycle. The other two parts of the emergency management plan, response and recovery, were not represented in the responses.

Furthermore, when examining the panel of experts on their incident response planning knowledge and practices, the experts ranged in where they were on the innovation-decision process. All participants had some previous knowledge of what a natural disaster was and the different things that could be done at an equine event. This could be deduced from the fact that all of the panel unanimously agreed that doing

nothing in the area of incident response planning was unacceptable. The AQHA show managers realized they needed to do something, making it evident they are aware or have the knowledge of incident response planning. Since 12 items did not reach consensus at the end of round three, some individuals were not past the persuasion stage, while others were onto implementation. AQHA show managers as a collective whole have not completed the innovation-decision process. The conclusion can be drawn that AQHA show managers have not fully adopted incident response planning tactics during equine events and are not conclusive about which steps should be involved. An individual or group must complete each of the five steps in the innovation-decision process for a new idea to be fully rejected or accepted (Rogers, 2003).

### **Implications**

Conclusive agreement about what should be part of an incident response plan was not reached. Many thought the responsibility of a plan should be in the hands of the event facility. Having an incident response plan will help prevent loss of life and lessen the amount of damages (Bryant, 2008). By having a plan of action that can be implemented at different events, show managers will be able to lessen and deter the amount of destruction of a natural disaster (Bryant, 2008).

According to FEMA, an incident response plan should be broad and able to be used on different scales. By being able to identify what should be part of an incident response plan at equine events, this information could be utilized by other individuals who are in charge of the safety of animals. Individual owners, stable managers, race track facilities, and other such people and organizations could use the information for an

incident response plan. By being prepared and properly equipped, unforeseen events such as disasters can be better handled (Bryant, 2008).

### **Recommendations for Practice**

The following are proposed recommendations based upon the conclusions of the results of the study. It is recommended for practice that AQHA should provide incident response information in mandatory training courses, offer more developed incident response material, and have workshops about incident response planning at equine events. Also, it is recommended for practice that other equine associations, organizations, or individuals provide incident response information to their show managers or event staff members.

### **Recommendations for Research**

The following are proposed recommendations based upon the conclusions of the results of the study. It is recommended for future research to study the event facilities perception on incident response and what they consider to be their role during an equine event. Also, further evaluate the communication relationship or event facility management and show management and how effective it is in an incident response plan. It is recommended for future research to conduct the study on a larger population of show managers and a different show manager population to gain valuable insight into different association views. Further research is needed to understand why certain incident response items in a plan are adopted and other items are not and to evaluate the incident response planning for bio-security at large-scale equine events. Since there are event attendees at the equine events, further research is needed to evaluate the views of equine event

attendees on the expected incident response plan-of-action. Last, it is recommended for future research to study what an insurance policy will cover under a policy for at an equine event concerning incident response.

## REFERENCES

- American Horse Council. (2014, April 28). National Economic Impact of the U.S. Horse Industry. Retrieved from <http://www.horsecouncil.org/national-economic-impact-us-horse-industry>
- American Quarter Horse Association. (2014a). About. Retrieved from <http://www.aqha.com/About.aspx>
- American Quarter Horse Association. (2014b). Advocacy. Retrieved from <http://www.aqha.com/About/Content-Pages/About-the-Association/Advocacy.aspx>
- American Quarter Horse Association. (2013). 2013 Annual Report. Amarillo, Texas: Author.
- American Quarter Horse Association (2014c). Show Management Guidelines & Procedures. Amarillo, Texas: Author.
- Bryant, S. J. (2008). Livestock and natural disasters. *Journal of Agricultural & Food Information*, 8(3), 107-113. doi: 10.1300/J108v08n03\_10
- Clawson-Freeo, S.K. (n.d). *Crisis Communication Plan: A PR Blue Print*. Retrieved March 17, 2014, from <http://www3.niu.edu/newsplace/crisis.html>



Creswell, J. W. (2012). Educational research: Planning, conducting, and evaluating quantitative and qualitative research, 4th ed. Boston: Pearson. - See more at:

<http://www.iidc.indiana.edu/?pageId=3428#sthash.DqCKXZEp.dpuf>

Davis, K. L. (2009). Oklahoma's rodeo industry: Making a buck. *Journal Record*, 1-3.

Retrieved from

<http://argo.library.okstate.edu/login?url=http://searchproquest.com/docview/259486432?accountid=4117>

Delbecq, A. L., Van de Ven, A. H., & Gustafson, D. H. (1975). *Group techniques for program planning*. Glenview, IL: Scott, Foresman & Company.

De Villiers, M. R., De Villiers, P. J. T., & Kent, A. P. (2005). *The Delphi technique in health sciences education research. Medical Teacher*, 27(7), 639-643.

Downs, G. W., Jr., & Mohr, L. B. (1976). Conceptual Issues in the Study of Innovation.

*Administrative Science Quarterly*, 21(4), 700-714. Retrieved from

<http://www.jstor.org/stable/2391725>

Edgar, L.D., Edgar, D.W., McGuire, A., Rutherford, T.A., Doerfert, D.L., Murthey T.P.

(2012) Crisis communication needs assessment: A Delphi study to enhance instruction for agricultural communicators and other stakeholders1. *NACTA Journal*, 56(4), 52-62. Retrieved from

<http://search.proquest.com/docview/1282546661?accountid=4117>

Equine. (2014). In Merriam Webster Dictionary online dictionary. Retrieved April 1,

2014, from <http://www.merriam-webster.com/dictionary/equine>

Everett, D. (2009). Oklahoma Historical Society. Horse Industry. Retrieved April 20, 2014, from <http://digital.library.okstate.edu/encyclopedia/entries/h/ho031.html>

Federal Emergency Management Agency. (2014, April). About. Retrieved from <http://www.fema.gov/about-agency>

Federal Emergency Management Agency. (2015, February). Animals in Disasters: The Care of Livestock and Horses in Disasters Module A Unit 8. Retrieved from <http://search.usa.gov/search?affiliate=netc&query=the care of livestock and horses during a disaster&op=Search>

Fidler, L. A., & Johnson, J. D. (1982). Characteristics of innovations and organizational structure related to innovation implementation. Speeches/Meeting Papers; Opinion Papers. Paper presented at the Annual Meeting of the International Communication Association in Boston, MA, May 2-5, 1982. Retrieved from <http://eric.ed.gov/PDFS/ED218682.pdf>

Freeman, D.W., (2009). Oklahoma Horse Industry Trends. Retrieved from Oklahoma State University Cooperative Extension Web site:  
[http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http%3A%2F%2Fpods.dasnr.okstate.edu%2Fdocushare%2Fdsweb%2FGet%2FDocument-2087%2FCR-3987web.pdf&ei=ea9eU\\_fVAaO-2gXf74CABQ&usg=AFQjCNG\\_NyzD-hHStqkB6jNTUqDCGijYMw&sig2=wTfKpKadxoODu9SJhLVnQ](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http%3A%2F%2Fpods.dasnr.okstate.edu%2Fdocushare%2Fdsweb%2FGet%2FDocument-2087%2FCR-3987web.pdf&ei=ea9eU_fVAaO-2gXf74CABQ&usg=AFQjCNG_NyzD-hHStqkB6jNTUqDCGijYMw&sig2=wTfKpKadxoODu9SJhLVnQ)

Gillespie, D. F., & Banerjee, M. M. (1993). Prevention planning and disaster preparedness. *Journal of Applied Social Sciences*, 17(2), 237-253.

Gupta, U. G., & Clarke, R. E. (1996). Theory and applications of the Delphi Technique: A bibliography (1975-1994). *Technological Forecasting & Social Change*, 53, 185-211.

Horse. (2014). Merriam-Webster online dictionary. Retrieved April 30, 2014, from <http://www.merriam-webster.com/dictionary/horse>

Lindell, M. K. (2013). Disaster studies. *Current Sociology*, 61, doi: 10.1177/0011392113484456

Linnabary, R. D., New, J. C., Vogt, B. M., Griffith-Davies, C., & Williams, L. (1993). Emergency evacuation of horses - a Madison county, Kentucky survey. *Journal of Equine Veterinary Science*, 13(3), 153-158.

Mish, F.C. (1999). Merriam-Webster's collegiate dictionary. Springfield, MA: Merriam-Webster.

Oklahoma Horse Industry Council. (2014, April 20) Homepage. Retrieved from <http://www.oklahomahorseindustrycouncil.com/>

Oklahoma Medical Reserve Corps (2014, April). Defining a Disaster. Retrieved from <http://www.okmrc.org/disaster/define.cfm>

Quarantelli, E.L. (1985). Organizational behavior in disasters and implications for disaster planning.

Quarantelli, E.L. (1988) Criteria For Evaluating Disaster Planning In An Urban Setting.

Ramsey, J. W. (2009). *Identifying entry-level skills expected by agricultural industry experts and determining teachers' perceptions on whether they are being learned through students' participation in the supervised agricultural experience component of the secondary agricultural education program: A two-panel delphi study* (Order No. 3390968). Available from Dissertations & Theses @ Oklahoma State University - Stillwater; ProQuest Dissertations & Theses Full Text. (305085005). Retrieved from

<http://search.proquest.com/docview/305085005?accountid=4117>

Ramsey, J. W., & Edwards, M. C. (2012). Entry-level technical skills that teachers expected students to learn through supervised agricultural experiences (SAEs): A modified delphi study. *Journal of Agricultural Education*, 53(3), 42.

Ready.gov. (2014, April). Natural Disasters. Retrieved from

<http://www.ready.gov/natural-disasters>

Redmond, A.D. (2009). 2 Natural disasters. *ABC of Conflict and Disaster*, 80, 4.

Robinson, L. (2009). A summary of diffusion of innovations. Enabling change, Retrieved from

[http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http://www.enablingchange.com.au/Summary\\_Diffusion\\_Theory.pdf&ei=d6hiU4CqFcacyATRsIKIBg&usg=AFQjCNGgGTGFb6TgFmSKP4-Iz8R0NevwgQ&sig2=EvuAgN5lbeFb6wKPHO8duA](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCcQFjAA&url=http://www.enablingchange.com.au/Summary_Diffusion_Theory.pdf&ei=d6hiU4CqFcacyATRsIKIBg&usg=AFQjCNGgGTGFb6TgFmSKP4-Iz8R0NevwgQ&sig2=EvuAgN5lbeFb6wKPHO8duA)

Rogers, E.M. (2003). *Diffusion of innovations*. New York: Free Press.

- Rogers, G.O., & Sorensen, J.H. (1991). Adoption of emergency planning practices for chemical hazards in the United States. *Journal of Hazardous Materials*, 27(1), 3-26.
- Schemann, K., Firestone, S., Taylor, M., Toribio, J., Ward, M., & Dhand, N. (2013). Perceptions of vulnerability to a future outbreak: A study of horse managers affected by the first Australian equine influenza outbreak. *BMC VETERINARY RESEARCH*, 9(1), 152-152. doi:10.1186/1746-6148-9-152
- Schiller, K. (2011). Disaster response. *Information Today*, 28(5), 39-40. Retrieved from <http://argo.library.okstate.edu/login?url=http://search.proquest.com/docview/865376436?accountid=4117>
- Soomaroo, L., & Murray, V. (2012). Disasters at Mass Gatherings: Lessons from History. *PLoS Currents*, 4, RRN1301. doi:10.1371/currents.RRN1301
- State of Oklahoma. (2014). OSF Service Support Incident Management Process Version 1.1. Retrieved from [www.ok.gov/documents/IncidentManagementProcess.doc](http://www.ok.gov/documents/IncidentManagementProcess.doc)
- Taylor, M., & Perry, D. C. (2005). Diffusion of traditional and new media tactics in crisis communication. *Public Relations Review*, 31, 209-217. doi:10.1016/j.pubrev.2005.02.018
- Terrell, S. (2011). Mixed-methods research methodologies. *The Qualitative Report*, 17(1), 254-280. Retrieved from <http://www.nova.edu/ssss/QR/QR17-1/terrell.pdf>
- Tomascik, Chelsea Roxanne (2011). Incident Response Planning for Selected Livestock Shows. Master's thesis, Texas A&M University. Available electronically from <http://hdl.handle.net/1969.1/ETD-TAMU-2011-12-10282>.

United States Department of Homeland Security (2008). National Incident Management System. Retrieved from [www.fema.gov/nims](http://www.fema.gov/nims)

Walker, B. (2011). Horse Events: Biosecurity guidelines for organisers and competitors. (3). Department of Primary Industries.

Welcome to the Emergency Management Institute. (n.d.). Retrieved March 15, 2015, from <https://www.training.fema.gov/emi.aspx>

## APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL



## Oklahoma State University Institutional Review Board

Date: Monday, November 24, 2014

IRB Application No: AG1447

Proposal Title: Incident Response at Large Scale Equine Events

Reviewed and  
Processed as: Exempl

Status Recommended by Reviewer(s): Approved Protocol Expires: 11/23/2017

Principal  
Investigator(s)

Mikayla Boga	Traci Nailo
2500 S Husband St Apt A-5	437 Ag Hall
Stillwater, OK 74074	Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of the research. And
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawneth Watkins 219 Cordell North (phone: 405-744-5700; dawneth.watkins@okstate.edu).

Sincerely,

  
Hugh Grethall, Chair  
Institutional Review Board

**Oklahoma State University Institutional Review Board**

Date: Monday, December 22, 2014 Protocol Expires: 11/23/2017  
IRB Application No: AG1447  
Proposal Title: Incident Response at Large Scale Equine Events

Reviewed and Exempt  
Processed as: **Modification**

Status Recommended by Reviewer(s) **Approved**

Principal  
Investigator(s):

Mikayla Boge	Traci Naile
2800 S Husband St Apt A-5	437 Ag Hall
Stillwater, OK 74074	Stillwater, OK 74078

---

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office **MUST** be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

- ☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

Modification to recruit additional participants for round 1 via phone calls and to add qualtrics questionnaire to protocol for round 2

Signature :

  
\_\_\_\_\_  
Hugh Crethar, Chair, Institutional Review Board

Monday, December 22, 2014  
Date

### Oklahoma State University Institutional Review Board

Date: Wednesday, March 25, 2015 Protocol Expires: 11/23/2017  
IRB Application No: AG1447  
Proposal Title: Incident Response at Large Scale Equine Events

Reviewed and  
Processed as: Exempt  
**Modification**

Status Recommended by Reviewer(s) **Approved**

Principal  
Investigator(s):

Mikayla Boge  
2800 S Husband St Apt A-5  
Stillwater, OK 74074

Traci Naile  
437 Ag Hall  
Stillwater, OK 74078

---

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office **MUST** be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

- ☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

Modification to conduct round three of study.

Signature :



Hugh Crethar, Chair, Institutional Review Board

Wednesday, March 25, 2015  
Date

APPENDIX B

PARTICIPATION REQUEST EMAIL

## **Participation Request Email**

Pre-notice (will be sent through Qualtrics)

Nov. 11, 2014

Dear (Show Manager):

I am writing to ask for your help with an important study being conducted by Oklahoma State University to learn more about natural disaster preparedness during a large-scale equine event. In one week, you will receive a request to participate in the study by answering a questionnaire.

We want to make the experience of participating in the study enjoyable and easy. I am writing in advance because many people want to be alerted ahead of time when they will be asked to fill out a questionnaire. This study can only be successful with participation from show managers like you.

If you have any questions about the study, please contact me at 620-215-3350. If you have questions about your rights as a research volunteer, you can contact Dr. Hugh Crethar, IRB Chair at 219 Cordell North, Stillwater, OK 74078; 405-744-3377; or [irb@okstate.edu](mailto:irb@okstate.edu).

Sincerely,

Mikayla Boge

Master of Science student

Department of Agricultural Education, Communications, and Leadership

Oklahoma State University

APPENDIX C  
ROUND ONE EMAILS

## Participation and Introductory Email

To: American Quarter Horse Association Show Managers  
Subject: Incident response study at large-scale equine events

Dear (Show Manager):

As you are aware, producing and managing a large-scale equine event requires much time and preparation. The safety of exhibitors, spectators, staff, and equines at the event are of the utmost importance. When a disaster strikes, it can be sudden and with little time to prevent or prepare. Having a plan in place is important for safety issues and the success of the event.

As an American Quarter Horse Association show manager, your experience and past training gives insight into the factors affecting large-scale equine events and the necessity for preparation. Your personal experiences and training are key to identifying what factors need to be included in a plan for natural disasters at a large-scale equine event. By knowing what needs to be included in a plan, other show managers can utilize the information and build-upon the existing knowledge for future equine events.

The primary purpose of this study is to determine what needs to be included in an incident response plan for a large-scale equine events.

This study includes three questionnaires that you will be asked to complete over the next few weeks. The first will take approximately 15 minutes to complete and includes questions regarding your demographic information as well as your perceptions on natural disaster preparedness during large-scale equine events. The second and third questionnaires will ask you to rate your level of agreement about the different factors that should be included in an incident response plan in the previous round. You will receive separate emails to notify you of the availability of the second and third questionnaires.

Please respond to the questions in terms of your knowledge and perceptions as an American Quarter Horse Association show manager. You will be able to access the questionnaires from your computer for a two-week period, and you may edit your responses within that time. If you are not able to access the online questionnaire, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Your immediate response is greatly appreciated.

Please remember your responses are voluntary and will be treated confidentially. Responses will be stored online in a password-protected account until the questionnaire is closed and then will be stored for approximately three years in a password-protected spreadsheet on the researcher's computer.

You may choose at any time to withdraw from the study without penalty. The risks associated with this study are not greater than those ordinarily encountered in daily life.

If you have any questions about the study, please contact me at (620)215-3350 or Dr. Traci Naile at (405)744-8135 or [traci.naile@okstate.edu](mailto:traci.naile@okstate.edu). If you have questions about your rights as a research volunteer, you can contact Dr. Hugh Crethar, IRB Chair at 219 Cordell North, Stillwater, OK 74078; 405-744-3377; or [irb@okstate.edu](mailto:irb@okstate.edu).

Sincerely,

Mikayla Boge  
Master of Science student  
Department of Agricultural Education, Communications, and Leadership  
Oklahoma State University



Reminder email

To: American Quarter Horse Association show managers  
Subject: Incident response at a large-scale equine event

Dear (Expert):

A week ago, I emailed you a link to an online questionnaire. The primary purpose of the questionnaire is to lead to an increased level of awareness for incident response planning during a large-scale equine event.

This questionnaire will take approximately 20 minutes to complete. Please respond to these questions in terms of your knowledge and perceptions as an AQHA show manager. Access to this questionnaire will be available for one more week, and you may edit your responses at any time within this remaining period. If you are not able to access the online survey, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Sincerely,

Mikayla Boge  
Masters Candidate  
Department of Agricultural Education, Communication, and Leadership  
Oklahoma State University

Second reminder email

To: American Quarter Horse Association show managers  
Subject: Incident response at a large-scale equine event

Dear (Show Manager):

I need your help! Two weeks ago, I emailed you a link to an online questionnaire. The primary purpose of the questionnaire is to lead to an increased level of awareness for incident response planning during a large-scale equine event. I did not receive enough responses back from the first round to make up a panel of experts. In order to move on with this study, I need more responses.

This questionnaire will take approximately 20 minutes to complete. Please respond to these questions in terms of your knowledge and perceptions as an AQHA show manager. Access to this questionnaire will be available for one more week, and you may edit your responses at any time within this remaining period. If you are not able to access the online survey, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Sincerely,

Mikayla Boge  
Master of Science student  
Department of Agricultural Education, Communications, and Leadership  
Oklahoma State University

APPENDIX D

ROUND ONE PHONE SCRIPT

Phone Script for recruitment

Subject: Incident response study at large-scale equine events

“Hello my name is Mikayla Boge. I am a Masters student at Oklahoma State University and the reason I am calling is because you were sent an email requesting your participation in my study on incident response at large-scale equine events. I did not receive enough email responses back. Would you be willing to commit to participating in the study by responding to the email? If you do not still have the email I would be able to resend you the last email reminder that was sent out.”

If no: “Thank you for your time and I hope you have a great day.”

If yes: “Thank you for your willingness to help me in my study. Please follow the instructions in the email to complete the study. Have a great day.”

APPENDIX E

ROUND ONE INSTRUMENT

#### Default Question Block

Thank you for participating in this study. The following questions will ask you to identify what is needed in an incident response plan for a large-scale equine event and to provide information about your background and experiences.

Please read the information provided below before responding to the questions. Your prompt response is appreciated, and receiving your response by **Dec. 16, 2014**, will help facilitate the timely completion of this study. You may submit your responses via this questionnaire or by postal mail, fax or email; however, completion of this questionnaire is preferred.

Mikayla Boge  
Department of Agricultural Education, Communications and Leadership  
Oklahoma State University

448 Agricultural Hall  
Stillwater, OK 74078  
620-215-3350  
boge@okstate.edu

**Background:** Natural disasters – such as earthquakes, extreme heat, floods, hurricanes, landslides, severe weather, thunderstorms, lightning, tornadoes, tsunamis, volcanic eruptions, wildfires, winter storms, and extreme cold – can happen any place and any time. Even a seemingly harmless situation or event could turn into a potentially deadly scenario. Some disaster situations progress slowly and have a warning period, enabling individuals to plan and adjust to the changing circumstances. Unfortunately, that is not always the case. Some disasters can happen within a short time frame, requiring preparation or an incident management plan ahead of time to be able to sufficiently deal with the disaster. With such a wide array of possible threats, a plan is crucial when dealing with disasters to ensure the safety of people and animals alike, particularly at large group events.

**Scenario:** A show manager is preparing for a large horse show that will be held during a two-week period. Exhibitors and spectators will come from across the United States during different times of the show to witness competition classes, enjoy an array of vendors, and participate in fun events held to promote the show. The spectators are able to visit as they please and do not have to sign in or out at the event. Exhibitors are required to check in and to provide 30-day health papers and a current Coggins test for each horse brought onto the premises. Exhibitors are not required to check out when they leave the premises. Once exhibitors have gone through the check-in process, they have full access to the event grounds. Few restrictions are placed on exhibitors.

During this event, the show manager is concerned with keeping the classes running smoothly, giving attention to any complaints made by exhibitors, and trying to make the event enjoyable for all involved. During a large competition class, where many competitors and spectators are gathered, a natural disaster is quickly unfolding without warning. The show manager's job is to ensure the safety of the people and animals at the event.

In context of the above background information and scenario, please answer the questions below.

When reading the above scenario, what natural disaster did you think of?

What would you do before a show to prepare to deal with a natural disaster during your event?

Please answer the following questions to provide information about your background and experiences. This information will be used to describe the participants of this study as a group and will not be connected with individual responses.

How many years have you served as an American Quarter Horse Association show manager?

How many AQHA-sanctioned shows have you managed?

Have you ever experienced a natural disaster during an AQHA show you were managing?

☐ Yes (please describe)

☐ No

Have you ever experienced a natural disaster at an equine event that you were not managing?

☐ Yes (please describe)

☐ No

What is your sex?

☐ Male

☐ Female

What is your age?

What is your race/ethnicity?

☐ Caucasian

☐ Native American

☐ Hispanic

☐ African American

☐ Other (please describe)

What is the highest level of education you have completed?

☐ High school

☐ Associate degree

☐ Bachelor's degree

☐ Master's degree

☐ Doctoral degree

In what AQHA region is your primary residence?

APPENDIX F

ROUND TWO EMAILS



To: Respondents to round one  
Subject: Incident response study at large-scale equine events

Dear (Subject):

Thank you for participating in round one of this research study, "Incident response study at large-scale equine events." Your feedback is greatly appreciated and has been used to develop a second questionnaire.

In this round of the study, you are asked to indicate your level of agreement about what should be included in a disaster plan for an equine event that was identified by all participants in the previous round. Now, your responses will help determine whether items should be included in or eliminated from this study. Depending on the level of agreement reached by all participants in this round, a third questionnaire may be required to include or eliminate items. You will be notified by a separate email if a third questionnaire is required.

This questionnaire will take approximately 20 minutes to complete. Please respond to the questions in terms of your knowledge and perceptions. If you are not able to access the online questionnaire, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Your immediate response is greatly appreciated.

Your responses are voluntary and will be treated confidentially. Responses to this questionnaire will be stored online in a password-protected account until the questionnaire is closed and then will be stored for approximately three years in a password-protected spreadsheet on the researcher's computer.

You may choose at any time to withdraw from the study without penalty. The risks associated with this study are not greater than those ordinarily encountered in daily life.

Thank you for taking time to complete the questionnaire. If you have any questions about the study, please contact me at (620)215-3350 or Dr. Traci Naile at (405)744-8135 or [traci.naile@okstate.edu](mailto:traci.naile@okstate.edu). If you have questions about your rights as a research volunteer, you can contact Dr. Hugh Crethar, IRB Chair at 219 Cordell North, Stillwater, OK 74078; 405-744-3377; or [irb@okstate.edu](mailto:irb@okstate.edu).

Sincerely,

Mikayla Boge  
Master of Science student  
Department of Agricultural Education, Communications, and Leadership  
Oklahoma State University

Respondents to round one

Subject: Incident response study at large-scale equine events

Dear (Subject):

Just a reminder that I need your help! A week ago, I emailed you a link to an online questionnaire that will help us learn about your views regarding what should be included in an incident response plan for an equine event.

This questionnaire will take approximately 20 minutes to complete. Please respond to the questions in terms of your knowledge and perceptions. You will be able to access the questionnaire from your computer for one more week. If you are not able to access the online survey, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Sincerely,

Mikayla Boge

Master of Science student

Department of Agricultural Education, Communications, and Leadership

Oklahoma State University

APPENDIX G  
ROUND TWO INSTRUMENT

### Default Question Block

Thank you for participating in this study. In round one, you were asked to describe what you would do before a show to prepare for a natural disaster that could occur during your event.

The responses I received from you and other participants in round one are listed below. The list is not in any particular order. **Please read each statement and mark your level of agreement with each item.**

A scale is available for you to use to indicate your level of agreement with each statement. Please rate each item from 1 to 6 as follows: **1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree.** Space is provided for you to offer additional comments if you believe that more information, detail, or clarification is needed regarding actions you would take to prepare for a natural disaster at an equine event. In addition, you may use the comments section to share additional actions you believe may have been overlooked in round one.

Also, the background information and scenario from round one are provided below, if you would like to review them before you begin marking the items in this round.

Your prompt response is appreciated, and receiving your response by Feb. 3, 2015, will help facilitate the timely completion of this study. You may submit your responses via this questionnaire or by postal mail, fax, or email; however, completion of this questionnaire is preferred. If you have any questions, please email me at [boge@okstate.edu](mailto:boge@okstate.edu) or call me at 620-215-3350.

Mikayla Boge  
Department of Agricultural Education, Communications and Leadership  
Oklahoma State University

448 Agricultural Hall  
Stillwater, OK 74078  
620-215-3350  
[boge@okstate.edu](mailto:boge@okstate.edu)

**Background:** Natural disasters – such as earthquakes, extreme heat, floods, hurricanes, landslides, severe weather, thunderstorms, lightning, tornadoes, tsunamis, volcanic eruptions, wildfires, winter storms, and extreme cold – can happen any place and any time. Even a seemingly harmless situation or event could turn into a potentially deadly scenario. Some disaster situations progress slowly and have a warning period, enabling individuals to plan and adjust to the changing circumstances. Unfortunately, that is not always the case. Some disasters can happen within a short time frame, requiring preparation or an incident management plan ahead of time to be able to sufficiently deal with the disaster. With such a wide array of possible threats, a plan is crucial when dealing with disasters to ensure the safety of people and animals alike, particularly at large group events.

**Scenario:** A show manager is preparing for a large horse show that will be held during a two-week period. Exhibitors and spectators will come from across the United States during different times of the show to witness competition classes, enjoy an array of vendors, and participate in fun events held to promote the show. The spectators are able to visit as they please and do not have to sign in or out at the event. Exhibitors are required to check in and to provide 30-day health papers and a current Coggins test for each horse brought onto the premises. Exhibitors are not required to check out when they leave the premises. Once exhibitors have gone through the check-in process, they have full access to the event grounds. Few restrictions are placed on exhibitors.

During this event, the show manager is concerned with keeping the classes running smoothly, giving attention to any complaints made by exhibitors, and trying to make the event enjoyable for all involved. During a large competition class, where many competitors and spectators are gathered, a natural disaster is quickly unfolding without warning. The show manager's job is to ensure the safety of the people and animals at the event.

### You should take the following actions to prepare for a natural disaster during your equine event:

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Meet with event facility management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain current facility map(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain current area map(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create an evacuation plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Monitor the weather	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Review the facility evacuation plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain information about scheduled road work near the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Develop a map that identifies all buildings, arenas, other structures, and road closures near the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appoint a safety director	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post 24-hour emergency contact information to be used by event attendees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordinate emergency procedures with event facility management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Coordinate emergency procedures with appropriate emergency response agencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Identify human shelter locations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arrange services with an equine medicine facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Arrange services for medical care of animals other than equines that may be at the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arrange a public address system for sharing information with event attendees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a procedure for notifying RV areas about emergencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain information about possible weather conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do nothing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Be aware of facility resources that might be available during emergencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tour event facility to identify safe areas for large groups of horses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Tour event facility to identify safe areas for large groups of people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tour event facility to identify safety hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have areas that you can relocate horses to that provide a safer environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create alternate event schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Use reliable communication equipment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicate with appropriate emergency response agencies about the number of animals expected at the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain information about the facility's ability to handle water run-off	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Post the location(s) of storm safety area(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arrange for equipment needed to counteract extreme heat (e.g., large fans, coolers, water)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan for extended breaks to accommodate for weather conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Plan for alternate class and activity locations within the event facility

☐☐☐☐☐☐

Plan for alternate show attire to accommodate for weather conditions

☐☐☐☐☐☐

Prepare for disasters, regardless of geographical location

☐☐☐☐☐☐

**Please provide additional comments about actions you would take to prepare for a natural disaster at an equine event and/or actions you believe were overlooked in round one.**

APPENDIX H  
ROUND THREE EMAILS

To: Respondents to round one  
Subject: Incident response study at large-scale equine events

Dear (Subject):

Thank you for participating in round two of this research study, "Incident response study at large-scale equine events." Your feedback is greatly appreciated and has been used to develop a third questionnaire.

In round two, you indicated your level of agreement with the statements provided from round one. In round three, we are attempting to reach consensus for items that did not reach either 50% disagreement or 75% agreement among panelists in round two.

This questionnaire will take approximately 20 minutes to complete. Please respond to the questions in terms of your knowledge and perceptions. If you are not able to access the online questionnaire, please email me at [boge@okstate.edu](mailto:boge@okstate.edu).

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Your immediate response is greatly appreciated.

Your responses are voluntary and will be treated confidentially. Responses to this questionnaire will be stored online in a password-protected account until the questionnaire is closed and then will be stored for approximately three years in a password-protected spreadsheet on the researcher's computer.

You may choose at any time to withdraw from the study without penalty. The risks associated with this study are not greater than those ordinarily encountered in daily life.

Thank you for taking time to complete the questionnaire. If you have any questions about the study, please contact me at (620)215-3350 or Dr. Traci Naile at (405)744-8135 or [traci.naile@okstate.edu](mailto:traci.naile@okstate.edu). If you have questions about your rights as a research volunteer, you can contact Dr. Hugh Crethar, IRB Chair at 219 Cordell North, Stillwater, OK 74078; 405-744-3377; or [irb@okstate.edu](mailto:irb@okstate.edu).

Sincerely,

Mikayla Boge  
Master of Science student  
Department of Agricultural Education, Communications, and Leadership  
Oklahoma State University

Respondents to round one  
Subject: Incident response study at large-scale equine events



Dear (Subject):

Just a reminder that I need your help! In this third round of the study, I have asked you to indicate your level of agreement about organizations and roles for which consensus was not reached in round two. A link was emailed to you a week ago.

This questionnaire will take approximately 20 minutes to complete. Please respond to the questions in terms of your knowledge and perceptions. You will be able to access the questionnaire from your computer for one more week. If you are not able to access the online survey, please email me at boge@okstate.edu.

By clicking on the following link, you are giving your consent to participate in this study. To access the online questionnaire, please [click here](#).

Sincerely,

Mikayla Boge  
Master of Science student  
Department of Agricultural Education, Communications, and Leadership  
Oklahoma State University

APPENDIX I  
ROUND THREE INSTRUMENT

## Introduction

Thank you for participating in this study. In round two, you were asked to rate your level of agreement with statements describing what you would do before a show to prepare for a natural disaster that could occur during your event. Of the 34 statements, the panel reached consensus on 17 items. The remaining 17 statements are included in this round of the study.

As in round two, please read each statement and mark your level of agreement with each statement. The list is not in any particular order. A scale is available for you to use to indicate your level of agreement with each statement. The scale includes options for strongly agree, agree, slightly agree, slightly disagree, disagree, and strongly disagree. Space is provided for you to offer additional comments if you believe that more information, detail, or clarification is needed regarding actions you would take to prepare for a natural disaster at an equine event. In addition, you may use the comments section to share additional actions you believe may have been overlooked in rounds one and two.

Also, the background information and scenario from round one are provided below, if you would like to review them before you begin marking the items in this round.

Your prompt response is appreciated, and receiving your response by March 31, 2015, will help facilitate the timely completion of this study. You may submit your responses via this questionnaire or by postal mail, fax, or email; however, completion of this questionnaire is preferred. If you have any questions, please email me at [boge@okstate.edu](mailto:boge@okstate.edu) or call me at 620-215-3350.

Mikayla Boge  
Department of Agricultural Education, Communications and Leadership  
Oklahoma State University

448 Agricultural Hall  
Stillwater, OK 74078  
620-215-3350  
[boge@okstate.edu](mailto:boge@okstate.edu)

**Background:** Natural disasters – such as earthquakes, extreme heat, floods, hurricanes, landslides, severe weather, thunderstorms, lightning, tornadoes, tsunamis, volcanic eruptions, wildfires, winter storms, and extreme cold – can happen any place and any time. Even a seemingly harmless situation or event could turn into a potentially deadly scenario. Some disaster situations progress slowly and have a warning period, enabling individuals to plan and adjust to the changing circumstances. Unfortunately, that is not always the case. Some disasters can happen within a short time frame, requiring preparation or an incident management plan ahead of time to be able to sufficiently deal with the disaster. With such a wide array of possible threats, a plan is crucial when dealing with disasters to ensure the safety of people and animals alike, particularly at large group events.

**Scenario:** A show manager is preparing for a large horse show that will be held during a two-week period. Exhibitors and spectators will come from across the United States during different times of the show to witness competition classes, enjoy an array of vendors, and participate in fun events held to promote the show. The spectators are able to visit as they please and do not have to sign in or out at the event. Exhibitors are required to check in and to provide 30-day health papers and a current Coggins test for each horse brought onto the premises. Exhibitors are not required to check out when they leave the premises. Once exhibitors have gone through the check-in process, they have full access to the event grounds. Few restrictions are placed on exhibitors.

During this event, the show manager is concerned with keeping the classes running smoothly, giving attention to any complaints made by exhibitors, and trying to make the event enjoyable for all involved. During a large competition class, where many competitors and spectators are gathered, a natural disaster is quickly unfolding without warning. The show manager's job is to ensure the safety of the people and animals at the event.

**You should take the following actions to prepare for a natural disaster during your equine event:**

	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Create an evacuation plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain information about scheduled road work near the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Develop a map that identifies all buildings, arenas, other structures, and road closures near the facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Appoint a safety director	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Arrange services for medical care of animals other than equines that may be at the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tour event facility to identify safe areas for large groups of horses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Tour event facility to identify safe areas for large groups of people	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Tour event facility to identify safety hazards	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create alternate event schedule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Communicate with appropriate emergency response agencies about the number of animals expected at the event	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Obtain information about the facility's ability to handle water run-off	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Post the location(s) of storm safety area(s)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Strongly Agree	Agree	Slightly Agree	Slightly Disagree	Disagree	Strongly Disagree
Arrange for equipment needed to counteract extreme heat (e.g., large fans, coolers, water)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan for extended breaks to accommodate for weather conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan for alternate class and activity locations within the event facility	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plan for alternate show attire to accommodate for weather conditions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepare for disasters, regardless of geographical location	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide additional comments about actions you would take to prepare for a natural disaster at an equine event and/or actions you believe were overlooked in rounds one and two.

## VITA

Mikayla Ann Boge

Candidate for the Degree of

Master of Science

Thesis: AMERICAN QUARTER HORSE ASSOCIATION SHOW MANAGERS'  
VIEWS ON INCIDENT RESPONSE PLANNING FOR NATURAL  
DISASTERS AT EQUINE EVENTS: A DELPHI STUDY

Major Field: Agricultural Communications

Biographical:

Education:

Completed the requirements for the Master of Science in Agricultural Communications at Oklahoma State University, Stillwater, Oklahoma in May, 2015.

Completed the requirements for the Bachelor of Science in Animal Science at Kansas State University, Manhattan, Kansas in 2011.

Experience: Social Media Manager, Lazy E Arena; Sales and Production Coordinator, Equine Promotion; Teaching Assistant, Oklahoma State University; Publicity and Marketing Intern, American Quarter Horse Association; Supervisor, Eskimo Joes Clothes; Association Services Coordinator, National Reining Horse Association